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REPORT of the SECRETARY of AGRICULTURE

1969

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UNITED STATES DEPARTMENT OF AGRICULTURE

Department of Agriculture
Washington, D.C.

The President
The White House
Washington, D.C.

Dear Mr. President:

It is my privilege to present to you this report on the services rendered by the Department of Agriculture to our farm and rural people and the whole Nation during the past year.

In your Inaugural Address you stated, "Forces are now converging that make possible, for the first time, the hope that many of man's deepest aspirations can at last be realized."

Among those aspirations, everyone would agree, are the desire for an abundance of food at reasonable prices such as will enable people to sustain themselves in health and vigor; a fair return for one's labor, capital investment, and enterprise; a climate of opportunity throughout the Nation which will enable American families to freely choose whether to live in the countryside or in a metropolitan area; the enjoyment of clean air, pure water, stable soils, abundant wildlife, and natural beauty.

In the pages of this report you will find a brief account of the efforts of the U. S. Department of Agriculture, in accordance with your directives and under your leadership, to help the Nation move toward the fulfillment of these aspirations. Here are presented many specific examples of the dedicated efforts of our USDA agencies and personnel.

With pleasure I submit herewith my first annual report as Secretary of Agriculture.

Clifford M. Hardin

Clifford M. Hardin
Secretary of Agriculture

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May 1970

THE FIRST YEAR

> *"I propose that our Nation commit itself to a national agricultural policy that will maintain an efficient, flourishing agricultural economy keyed to opportunity and abundance, with family farm enterprise as its cornerstone."*
>
> RICHARD M. NIXON, Des Moines, Iowa, 1968

During the first year of this Administration—1969—significant strides were taken toward the objective outlined above. The year witnessed both a considerable improvement in the agricultural economy and important new directions in agricultural policy.

THE AGRICULTURAL ECONOMY

The upswing in the farm economy was highlighted by:

- A rise in farm operators' realized net income to about $16 billion—$1.2 billion more than in 1968.
- An increase in average realized net income per farm to an all-time high of $5,401—compared with $4,841 in 1968.
- Growth in the per capita disposable personal income of farm people to a record $2,375—compared with $2,163 in 1968 and $1,100 in 1960.
- A rise in total agricultural assets at the end of 1969 to a record $307 billion. This contrasts with assets totaling $297 billion in 1968 and $203 billion in 1960.
- A record agricultural equity—farm assets minus all farm debt—of $249 billion, as against $243 billion in 1968, and $178 billion in 1960.

The Supply-Demand Situation

The supply-demand situation of agricultural products overall was in relatively good balance. Carryover stocks of feed grains and cotton remained stable at reasonable reserve levels. The volume of Government purchases of milk and dairy products declined, and except for 1966 was the lowest since 1952.

Stocks of wheat and soybeans, however, increased and were above desirable levels. Nevertheless, despite another sharp rise in the soybean crop in 1969 to a level almost 15 percent above 1968, little change in soybean carryover as of September 1, 1970, is anticipated. We look for a boost of about 15 percent in soybean disappearance during the 1969–70 marketing year.

The Export Situation

In contrast to these plusses in the agricultural situation, the total value of U.S. agricultural exports continued the decline which had begun more than a year earlier. Farm exports during the 1969 fiscal year fell 9 percent and were at the lowest level since 1962–63. Contributing factors were the prolonged dock strike; a reduction in food aid shipments, chiefly to India and Pakistan where bumper crops were harvested; and a loss of dollar sales, due to large grain crops in Europe and competing countries, noncompetitive U.S. cotton prices, and a shortage of certain grades of U.S. cotton.

During the last half of calendar 1969, however, exports of U.S. farm products were about 6 percent higher than in the same months of 1968 and continued gains are expected during 1970.

NEW DIRECTIONS FOR FARM POLICY

Although the progress of 1969 was welcome and hopeful, agriculture's longtime problems continued and new farm policy emphases are obviously needed.

Farm Income Still Low

The average person on a U.S. farm in 1969 still had only about three-fourths (75.7 percent) as much disposable income as the average nonfarm person. Though there was significant improvement over 1968, when the proportion was 72.7 percent, the disposable personal income of farm people from all sources in 1969 was only $2,375, compared with $3,137 for the average nonfarm person.

In addition, people on farms were hit particularly hard by inflation. Unlike many other producers, farmers cannot pass on to the buyers of their products the effects of rising production costs. No economic group in America has a bigger stake in sound fiscal policy and inflation control than agriculture.

Increased Foreign Competition

Turning from general problems to more specific difficulties, we find U.S. farm products facing increasing competition in foreign markets. This is particularly true in world grain markets.

With world grain production for the past 4 years averaging 115 million tons more than in the preceding 4 years, world grain stocks in 1969 were at an alltime high. Not only were such traditional exporters as the United States, France, Canada, and Australia well supplied with grains, but traditional importing countries were also accumulating sizable stocks. West Germany, for example, held record stocks of wheat and Japan had record rice stocks. Since Canada, Australia, and Argentina depend on foreign outlets relatively even more than the United States, competition for world markets is very keen.

Our agriculture needs to gear itself to meet its competition in terms of price and quality and thus maintain a strong position in foreign trade.

Agriculture's Major Problem: Excess Productivity

The major continuing problem in agriculture—and one which specifically affects the level of income—is the capacity and the tendency to produce more of some crops than domestic and foreign markets can handle at satisfactory prices.

In an earlier day commodity price supports were expected to help solve both the problem of economic stability for the larger commercial producer and the problem of poverty income for the small, inadequate producer.

Today, it is increasingly obvious that commodity price supports high enough to help substantially the small, inadequate producers would "overbenefit" the larger commercial producers and place U.S. price supported products in an impossible competitive position.

New approaches and new programs must be provided to meet the specific requirements of commercial producers and the totally different requirements of families on small, inadequate farms.

NEW FARM LEGISLATION NEEDED

These problems underscore the need for new acceptable and workable farm legislation.

The Agriculture Act of 1965, as extended, expires after the 1970 crop. Without new legislation, the old basic farm legislation would come into effect.

The results of this, as foreseen by USDA economists, would be:

- A drop in 1971 net farm income of from $800 million to $1.2 billion below the $16 billion level of 1969, due largely to smaller Government payments.
- Acquisition by the Government of roughly 40 million tons of grains and 6 million bales of cotton from 1971 crops.
- A decline in the 1971 costs of Government programs of between $450 million and $800 million below the 1969 level —but a rise in these costs in later years due to increased handling and storage charges for the mounting feed grain and cotton stockpiles.
- A rapid shift to competing fibers by the textile industry because of excessively high and noncompetitive cotton price supports.

Seeking a Consensus

Recognizing the enormous complexities involved in developing farm programs which would bring about production adjustment and maintain farm income without inhibiting the growth of markets or placing obstacles in the way of farming efficiency, we used our first months in office to find as much common ground as possible among farmers, farm groups, and Members of Congress. Many meetings were held with the Members of Congress most directly concerned with agriculture.

The viewpoints of agricultural and rural leaders in the field were sought and heard in five regional "listening conferences" held in Lincoln, Nebr.; Pullman, Wash.; Fresno, Calif.; Athens, Ga.; and College Station, Tex. These conferences were attended by leaders from 32 States.

During the summer and fall of 1969, there were worked out with Members of the Congress (for presentation early in 1970) proposals which we believe would move agriculture in the direction of more emphasis on individual decision-making and a stronger role for the commercial market. These proposals, the joint product of many months of bipartisan labor, were designed to make our major farm products more competitive, thus opening the possibility for larger markets. By permitting more efficient use of resources, they would help farmers reduce production costs. They would meet the two most persistent demands of the farm sector, namely, farm income protection and more latitude for farmers to make their own operating decisions.

Besides the commodity program approaches, three resource adjustment programs were outlined in September 1969 for consideration as possible methods to shift unneeded cropland into other uses on a long-term basis.

These three approaches were: Revival of the Cropland Conversion Program which was authorized as a pilot program in 1962 but had not been used for some time; a living space program which would be an expansion of the Greenspan idea under which States and local government units could purchase cropland for use as parks, airports, and living space in general; an easement program for converting whole farms permanently from cropping to other uses.

Neither the commodity approaches nor the resource adjustment approaches, however, could meet the needs of many low-income farmers on small, inefficient units as well as the requirements of other rural people. For these people a new rural development approach would be needed to supply off-farm employment in rural areas and a whole new climate of opportunity in the American countryside.

RURAL DEVELOPMENT

Rural America—defined as that part of the country lying outside the 233 designated metropolitan areas and including America's smaller cities and towns as well as agricultural areas—contains nearly a third of the Nation's people, nearly half of the Nation's poor, and roughly 60 percent of its substandard housing. One in three of our rural communities with a population over 1,000 has no public sewage facilities. These factors, added to the lack of enough good jobs in rural communities, are among the reasons for the declining proportion of people living in rural America.

Exodus from the Countryside

During the past 20 years total U.S. population has increased by 53 million, which is also about the net increase of the metropolitan areas. In other words, the total number of people living in rural America has remained unchanged. There has been a mass migration from the countryside which completely offset the large excess of births over deaths in rural areas.

Although the peak of the migration is past, the movement out of rural America continues. Some 1,100 U.S. counties, the overwhelming proportion of them rural, declined in population between 1960 and 1966.

Sound Growth Policy Needed

Projections indicate that U.S. population may increase by as many as 100 million persons by the end of the century, with the overwhelming majority of the increase being concentrated in metropolitan America. In view of the congestion and environmental problems already existing in the big cities, such an added concentration could be disastrous.

The alternative is to create in and around the smaller cities and towns of rural America a new environment of jobs, education, and favorable living conditions that will, first, stem net migration to urban centers, and then reverse it. A sound national growth policy is needed which, by giving the Americans of tomorrow a real choice of where they want to live, will lead to a healthy distribution of U.S. population throughout the Nation. Surveys indicate that 6 out of 10 adults in the Nation's metropolitan centers would move to less concentrated urbanized areas if they could live anywhere they wished.

Forward Steps

The creation of the Urban Affairs Council with the Secretary of Agriculture as a member, the appointment of the Task Force for Rural America, and the establishment of the Rural Affairs Council were three vitally important steps taken in 1969 toward the development of a sound national growth policy.

The Department moved to restructure its resources and organization to assure that it would be able to play its full role as an integral part of the national growth effort.

To improve utilization of the special capabilities of USDA agencies in achieving rural development, the functions of the Rural Community Development Service were increasingly transferred directly to these agencies. Coordination of rural development programs, as well as policy development in this field, was lodged in a national USDA Rural Development Committee.

In the field, rural development action was stimulated through 50 State committees, made up of USDA and other key personnel, under the coordination of the Cooperative Extension Service.

> Progress was made especially in the drive to expand housing credit resources in rural areas. Rural home financing through the Farmers Home Administration totaled more than $588 million in direct and insured funds

during calendar year 1969, compared with $522 million during the previous year. Some 58,300 loans were made to individual families as against 55,700 a year earlier. The number of rural rental housing units increased from 2,030 to 2,403.

Rural electric systems financed by the Rural Electrification Administration posted their biggest consumer gain since 1952. The systems, mostly cooperatives, added an estimated 190,000 consumers during calendar 1969—40,000 more than had been anticipated.

FOOD AND NUTRITION

When this Administration took office one of our goals was to move as rapidly and effectively as possible toward the utimate objective of erasing poverty-related malnutrition and hunger from the United States.

More People Served

Major progress was achieved during the year in making better use of our food abundance.

- In early 1969, 485 counties and independent cities of the approximately 3,129 in the Nation had no Federal food programs in operation. At the end of 1969, all but 279 counties and independent cities either had or had applied for the Food Stamp Program or the Commodity Distribution Program.
- At the end of 1969, 3.4 million persons were taking part in the Food Stamp Program—700,000 more than a year earlier. The Commodity Distribution Program was reaching more than 3.6 million people—up almost 89,000 from a year earlier. The Child Nutrition Program was providing free or reduced-price lunches to 4 million children from needy families, 1.6 million more than at the same time a year earlier.

Equally important, the programs themselves were improved. Food Stamp schedules were restructured so that all income groups, including the lowest, could buy food for a more adequate diet.

Under the new schedules, a family of four receives $106 worth of food coupons each month—an increase of 83 percent over the previous minimum of $58 a month. The new formula enables all Food Stamp participants to buy the equivalent of the Department's economy food plan. Coupon allotments were also set at a uniform level nationally, eliminating the separate schedules that had been used for North and South.

These improvements were made possible by the $610 million provided in USDA appropriations for fiscal year 1970 operation of the program.

Nutrition Education Expanded

Poverty is only one of the major problems involved in hunger and malnutrition. Others are lack of knowledge and lack of incentive to improve nutrition. An intensive nutrition education campaign was undertaken by the Department during 1969.

> At the end of December 1969, 5,242 nutrition aides were working with 159,906 families (containing 766,511 persons) in the Food and Nutrition Education Program. These nutrition aides, recruited by the Cooperative Extension Services from within depressed areas, were helping their neighbors stretch their food dollars and serve more nutritious meals. Many of the workers had previously been unemployed. More than 60 percent were from minority groups. In using their special intensive training to teach food buying, meal planning, and budgeting within depressed areas, they are closing one of the Nation's most damaging communication gaps.
>
> The nearly 160,000 families and 5,242 trained aides in the Food and Nutrition Program at the end of 1969 contrasts with only 28,433 families and 2,920 aides participating as of the end of February 1969. Altogether, over 8,000 aides were trained and had worked in the program at some time during calendar year 1969.

Food Is a Good Buy for Most Americans

Although hunger in America is more widespread than had formerly been believed, the blessings of agricultural abundance are enjoyed by most of our people. In 1969 American consumers got their diet for 16½ percent of their income, after taxes. This is the lowest proportion of income spent for food in history. It compares with 17 percent in 1968 and 20 percent in 1960.

In contrast, people in the British Isles spend about one-fourth of their income for food, people in Italy and Japan more than one-third, and people in Russia about one-half—and for far less varied diets than U.S. consumers enjoy.

Safeguarding Food Wholesomeness

A significant expansion in the inspection of meat and poultry was also effected during the fiscal year.

There were 936 poultry packing plants and 3,178 meatpacking plants under Federal inspection in 1969, compared with 917 poultry plants and 2,860 meatpacking plants in 1968.

Some 80.4 billion pounds of meat and meat products were produced in inspected plants in 1969, compared with 76.1 billion pounds in 1968. The volume of poultry inspected and reinspected climbed to 20.1 billion pounds in 1969, as against 19.6 billion pounds a year earlier.

Progress was also made toward the goal of bringing inspection systems in the States closer to equality with the Federal inspection system.

THE AMERICAN ENVIRONMENT

Because agriculture is both user and custodian of most of the Nation's soil and water resources, the Department of Agriculture has major responsibilities for protecting and enhancing the quality of the environment.

Of all the land in farms and ranches in the United States, 68 percent is directly involved in USDA soil and water conservation programs. The Department also administers 187 million acres of National Forests and Grasslands. Key responsibilities relative to the use of agricultural chemicals, particularly pesticides, by both farm and nonfarm people are lodged in the Department.

Changes in Use of Pesticides

During 1969 we took several important steps in the interests of a healthy environment:

> In July, all pest control operations being conducted by the Department itself and involving the use of nine persistent pesticides were suspended pending a review. Subsequently, the use of dieldrin, heptachlor, and DDT was either eliminated or drastically reduced in these programs.
>
> In November, we announced that Federal DDT registrations amounting to 35 percent of the total DDT used nationally—including home and garden uses—were being cancelled, and that all other nonessential uses of this pesticide would be prohibited by December 31, 1970.
>
> Actions were taken to carry out chemical by chemical and use by use review of DDT and other persistent pesticides.

Our working relations with other Federal agencies were strengthened by the appointment of an environmental quality coordinator for the Department.

Conservation Progress

All heads of USDA agencies were instructed in June 1969 to lead a nationwide effort to improve water quality through prevention of pollution from Federal activities.

The Soil Conservation Service gave technical assistance in its specialities to more than 18,000 governmental and planning units, helping communities develop plans to guide the use and care of land, water, and related resources.

During 1969, 130 small watershed projects were approved for Department help; this was nearly one-seventh of all the projects approved in the 15-year history of the program. It is estimated that flood and sediment damages were reduced by about $33 million in 1969 by small watershed projects carried out with USDA assistance.

The Great Plains Conservation Program was extended for another 10 years, and its provisions were broadened to do a better job in pollution control, fish and wildlife improvements, and recreation.

Nearly a million farmers, ranchers, and woodland owners cooperated under the Agricultural Conservation Program by engaging in soil, water, woodland, and wildlife conservation practices on 45 million acres.

During 1969, 9,946 fires were controlled on the more than 200 million acres of National Forest protected areas. Even though the number of fires was higher than in 1968, less than half the number of acres was burned.

RESEARCH

Department research in 1969 continued to advance toward better farming and better living:

- The first commercial hybrid of a small grain—hybrid barley—was produced. This was a major breakthrough in small grains research.
- Chemical defleecing of sheep was successfully accomplished.
- Poultry researchers discovered two auspicious leads toward controlling Marek's disease, the most costly disease of poultry.
- A new chemical finishing process was developed for durable press cotton garments.
- Tests of a recently developed cloud-seeding operation designed to reduce forest fires caused by lightning strikes produced dramatic results—a 70-percent reduction in serious, destructive lightning-strike fires.

Other research has shown that:

- Pasteurized whole milk can be fortified with iron without damaging flavor.
- Plant-soil filters in the form of grass-covered basins can cleanse 300 acre-feet or more of secondary sewage effluent per year and provide for re-use of water for irrigation, recreation, or even human use.
- Wood that is presently wasted can be used in new and unique designs for rafters and thus significantly reduce material costs for homes.

REORGANIZATION OF THE DEPARTMENT

To enable the Department to meet its responsibilities more effectively in the new areas of emphasis, some reorganization was necessary.

International Affairs and Commodity Programs

In an effort to achieve a closer coordination of related Department programs, we combined the supervision of our agencies concerned with international affairs and those concerned with agricultural exports. The Assistant Secretary for International Affairs and Commodity Programs supervises the Foreign Agricultural Service, the Export Marketing Service, the Agricultural Stabilization and Conservation Service, the Federal Crop Insurance Corporation, and is President of the Commodity Credit Corporation.

Export Marketing Service

In order to place new emphasis on programs relating to agricultural exports, especially exports for dollars, we established the Export Marketing Service as a separate agency. It brings into focus in one agency our USDA export sales activities.

Foreign Economic Development Service

This agency replaced the International Agricultural Development Service. The FEDS is concerned with economic development through technical agricultural assistance and the training of foreign agricultural experts. It is under the supervision of the Director of Agricultural Economics in order to bring this work closer to other economically oriented activities of the Department.

Food and Nutrition Service

We established the Food and Nutrition Service as a separate agency to permit greater specialization and concentration on the effective administration of Federal food programs for children and needy adults. This agency has direct responsibility for the expansion of family food assistance programs into new counties and cities and also for encouraging full participation in these programs by all eligible persons.

Rural Development Activities

To improve utilization of the special capabilities of USDA agencies in achieving development of the nonmetropolitan area, we reorganized the Department's rural development programs.

Agricultural Research Policy Advisory Committee

Cooperation between the Department and the land-grant colleges and schools of forestry has been one of the most successful models of government-university relationships.

In conjunction with the President of the National Association of State Universities and Land-Grant Colleges, I appointed a new Agricultural Research Policy Advisory Committee to help in planning and implementing regional and interstate research programs.

To further improve research, we designated the National Academy of Sciences to review the research on agriculture as a science.

IMPROVED PROGRAM EFFECTIVENESS AND EFFICIENCY

The rapid changes of the past few years in technology, sociology, rural and urban America, international relationships, communications, and transportation challenge management systems. To enable the Department to respond more effectively to needs, USDA programs were examined with special attention to possible changes in management procedures, procurement, and contracting practices. This was reflected in organizational changes effected during the year.

After being restructured to strengthen program development, the Agricultural Stabilization and Conservation Service reduced from 12 to 8 the number of organization units reporting directly to the Administrator.

Functions were combined or condensed in several units during a complete reorganization of the Rural Electrification Administration. Related savings are $283,000 annually. Some program changes made to improve responsiveness also promoted efficiency.

In several programs procedures for awarding grants were simplified, and duplication between financial, administrative, and fiscal audits of grantees by Department agencies was eliminated.

Farmers and landowners now get approval of their engineering plans for watershed projects 3 weeks faster because Soil Conservation Service State offices have been delegated authority to approve these plans. There are some 250 plans approved yearly throughout the United States.

In the USDA Cost Reduction and Operations Improvement Program, progress reports from all USDA agencies revealed fiscal year 1969 savings totaling $267 million. One outstanding example from the Farmers Home Administration was the updating of county offices management systems which produced savings of $224,000 in 1969 with additional savings of $307,000 anticipated for 1970.

A cost reduction goal of $169 million has been set for fiscal 1970.

Civil Rights

The Department reacted positively to charges of discrepancies in the area of civil rights with a strengthening of policies and regulations in that area. A comprehensive training program was given to agency heads and was begun among supervisory personnel. This program is designed to reach all full-time employees of the Department.

We directed each agency head to report to the Office of the Secretary no later than March 31, 1970, concerning a series of corrections which we have requested.

This, in summary form, is the record of our progress in "The First Year." In the pages that follow we discuss in more detail some of the specific advances made during 1969.

STRENGTHENING THE AGRICULTURAL ECONOMY

"Farming looks mighty easy when your plow is a pencil, and you're a thousand miles from the cornfield."

Dwight Eisenhower

The year 1969 carried the Nation a step nearer the goal of balanced agricultural abundance and more adequate income for farmers. Production increased slightly over 1968 to a new alltime high, but without causing difficult surplus problems. Net farm income rose substantially above expectations early in the year, even though the level of income was still far from adequate.

FARM INCOME RISES

Realized net farm income climbed to about $16 billion in 1969. This was about 8 percent higher than the $14.8 billion income of 1968 and except for 1966 was the highest in 22 years.

Gross farm income was estimated at a new high of $54.6 billion, about $3.5 billion more than in 1968. Cash receipts from farm marketings totaled $47.4 billion, a little over $3 billion more than in 1968. Livestock and livestock products contributed most to the increase.

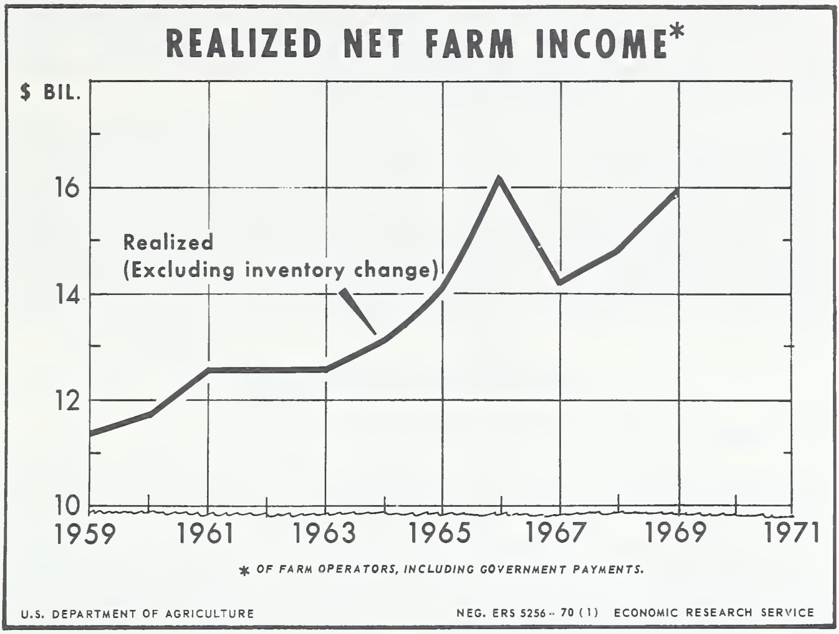
On the other hand, inflationary pressures operating throughout the economy sharply boosted farm production expenses to about $38.6 billion, some $2.25 billion more than in 1968. Part of the increased costs resulted from higher prices for farm products, because close to one-third of all farm production expenses—feeder livestock, feed, and seed—originate on farms. Since 1953 farm production expenses have increased every year, except 1964.

Realized net income per farm in 1969 is estimated at $5,401. This is $560 higher than in 1968, and well above the previous record of $5,044 in 1966.

Farm people are also earning more from off-farm jobs. Their total per capita disposable income (after taxes) from all sources, farm and nonfarm, in 1969 averaged $2,375, compared with $2,163 in 1968, and only about $1,100 in 1960. In 1959, farm people on the average had only a little over half as much income (54.5 percent) as the nonfarm population. In 1969, the average farm resident had about three-fourths as much income (75.7 percent) as people living off the farm. Although the income gap between farmers and nonfarmers has been cut sharply in recent years, a wide disparity still exists.

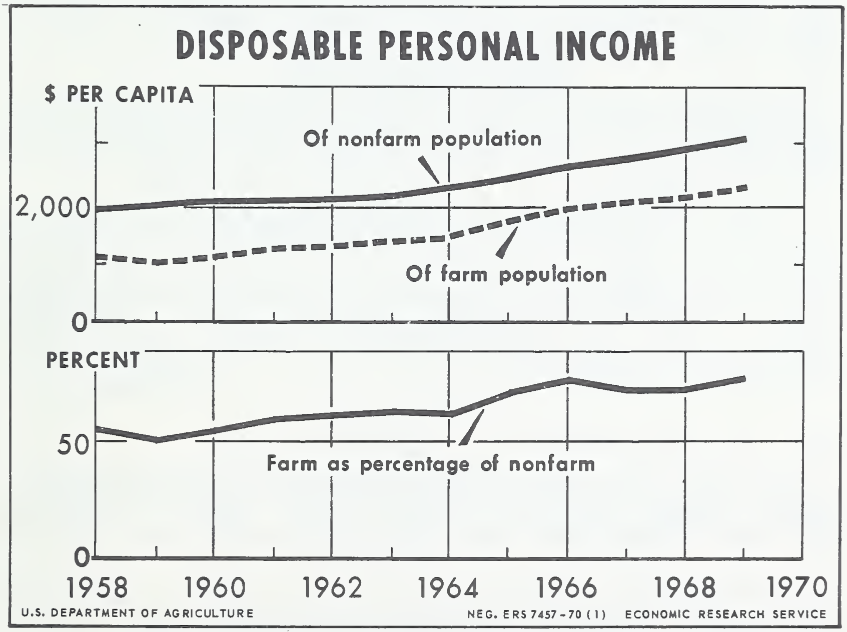
PRODUCTION AT ALLTIME HIGH

Farm output climbed to another new high in 1969, although livestock production and crop production were both only slightly above 1968.


REALIZED NET FARM INCOME*

* OF FARM OPERATORS, INCLUDING GOVERNMENT PAYMENTS.

U.S. DEPARTMENT OF AGRICULTURE NEG. ERS 5256 - 70 (1) ECONOMIC RESEARCH SERVICE


DISPOSABLE PERSONAL INCOME

U.S. DEPARTMENT OF AGRICULTURE NEG. ERS 7457 - 70 (1) ECONOMIC RESEARCH SERVICE

Output of crops in 1969 rose about 1 percent over the preceding year. Farmers harvested 286 million acres of the 59 major crops, about 9 million less than in 1968, but this was slightly more than offset by higher yields per acre.

Farm production per man-hour continued its brisk climb. The average farmworker in 1969 supplied food and fiber for about 44 persons, 20 persons more than a decade earlier. The American farmer is increasing his productivity at a more rapid rate than most other segments of the economy. Thus, between 1959 and 1969, output per man-hour of farmwork increased by 73 percent, in contrast to an increase in nonfarm output of 31 percent per man-hour.

THE SUPPLY SITUATION

The Wheat Harvest

The U.S. wheat harvest in 1969 totaled 1,459 million bushels, about 7 percent below the record 1968 crop.

The 1969 acreage allotment was cut to 51.6 million acres, about 13 percent below 1968, and harvested acres totaled 47.6 million, compared with 55.3 million in 1968. Aided by good weather, however, the average yield of wheat per acre was a record 30.7 bushels, 2.2 bushels above the 1968 yield.

U.S. carryover stocks of wheat climbed from 539 million bushels on July 1, 1968, to 819 million bushels on July 1, 1969. Even with the 7 percent decline in the 1969 crop, some further buildup is expected and carryover stocks as of July 1, 1970, are likely to approach 900 million bushels.

In the face of the tight world wheat situation, U.S. wheat exports declined from an average of about 790 million bushels during the 1965–67 period (when world supplies were unusually low) to 544 million bushels in 1968–69—the smallest in a decade.

In view of the domestic and world wheat supply situation, we announced a 1970 wheat allotment of 45.5 million acres—down 12 percent from 1969 and the lowest in the history of the Wheat Allotment Program. The allotment was reduced to this level with the aim of reducing 1970 wheat production below requirements, reducing total carryover stocks of wheat, and strengthening market prices for wheat.[1]

Large Feed Grain Crops

Feed grain production in 1969 is estimated at 174.2 million tons, about 3 percent more than the 1968 harvest. This very large output, only 1 percent below the all-time high of 1967, was achieved

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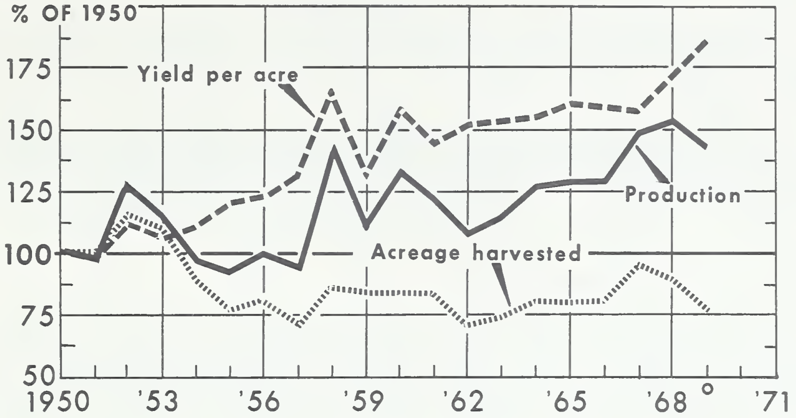
[1] Early in 1970 two major competitiors took action which may help ease the world situation. Australia has announced a quota delivery system which is aimed at making wheat production less attractive to Australian farmers. Canada embarked on a program which may take up to 22 million acres of wheatland out of production.

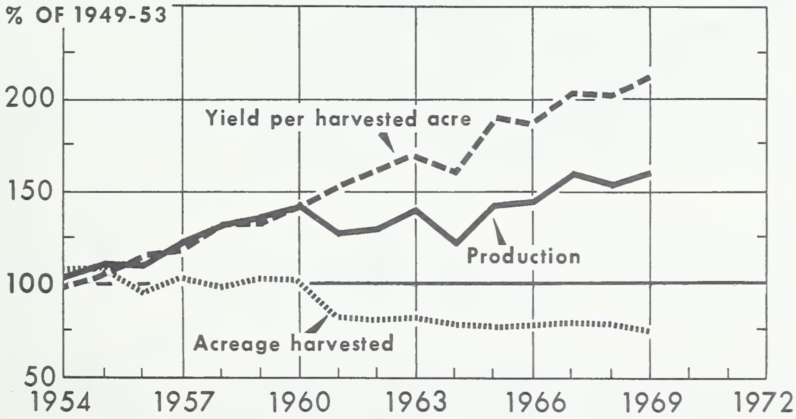
WHEAT ACREAGE, YIELD AND PRODUCTION



°BASED ON AUGUST 1 INDICATIONS.

U. S. DEPARTMENT OF AGRICULTURE NEG. ERS 3967-69 (8) ECONOMIC RESEARCH SERVICE

FEED GRAIN ACREAGE, YIELD AND PRODUCTION



1969 PRELIMINARY.

U.S. DEPARTMENT OF AGRICULTURE NEG. ERS 7462-70 (1) ECONOMIC RESEARCH SERVICE

despite a 2 percent reduction in acres harvested. Corn yields were a record 83.9 bushels per acre, more than 5 bushels above the previous high of 1967; barley yields were almost a bushel above the previous record; yields of sorghum and oats were near alltime highs.

Domestic feed grains use is expected to continue heavy in 1969–70, probably exceeding the 1968–69 record high of 149 million tons.

We anticipate, therefore, that the increased feed grain supplies for the 1969–1970 feeding year will be balanced by large domestic consumption and exports. Stocks on hand in the fall of 1970 are expected to be about the same as in 1969—about 50 million tons.

Soybeans—The "Miracle Crop"

In 1969 soybean production rose to a new record of 1,117 million bushels, slightly above 1968. Total soybean supplies for the 1969–70 marketing year are a record 1,441 million bushels, 14 percent above the year before. The increase is due mainly to larger carryover stocks.

To bring utilization more in line with production, the 1969 loan rate was reduced to $2.25 per bushel for U.S. No. 1 beans, down about 25 cents from a year earlier.

Total utilization in 1969–70 is expected to equal the record 1969 production, rising 18 to 19 percent above the previous season for the biggest single year increase ever recorded. Domestic crushings are estimated at 700 million bushels and exports at around 360 million bushels. Carryover stocks on September 1, 1970, are estimated at 320 million bushels, little changed from the record 324 million of September 1, 1969. The U.S. support price for 1970-crop soybeans remains at $2.25 per bushel.

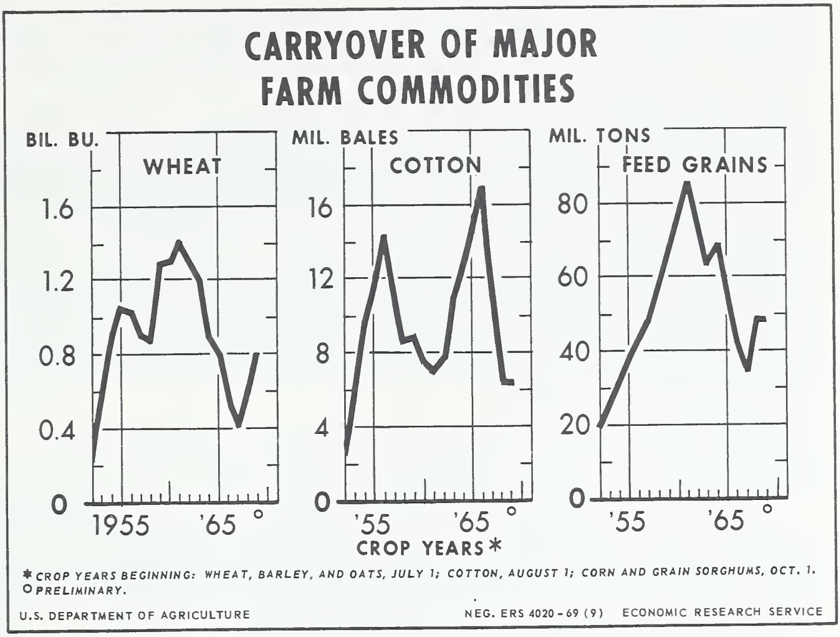
The overall long run prospects for U.S. soybeans seem bright. Improved diets throughout the world are expanding the demand for livestock products and the need for soybean meal in livestock and poultry feed rations is expected to grow.

Cotton Supplies Normal

The 1969 cotton crop is estimated at 10.0 million bales. This is about 8 percent less than the 1968 crop but more than one-third above the extremely short 1967 production.

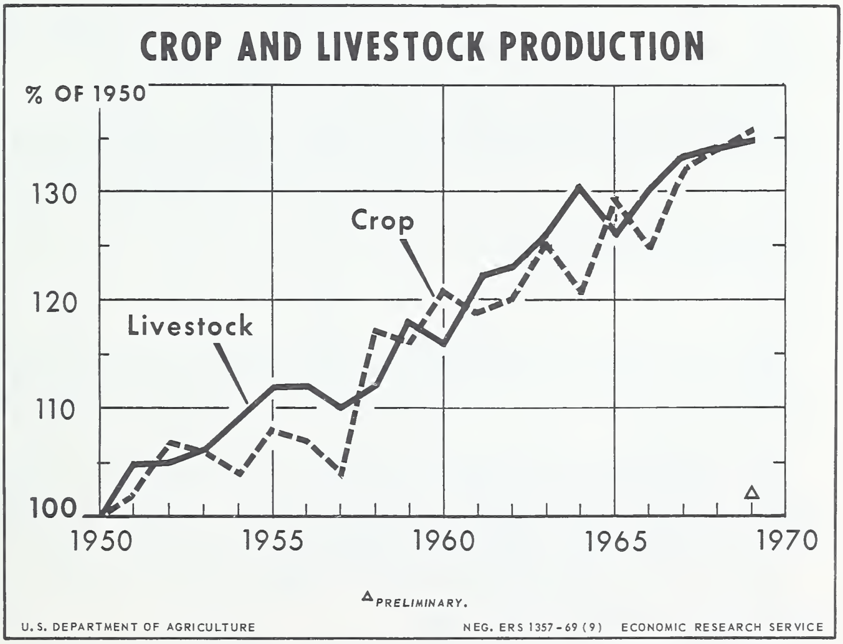
Cotton was planted on about 11.9 million acres in 1969, some 9 percent more than in 1968. The increase stemmed primarily from the dropping of the required diversion and payment provisions in the Cotton Program. However, adverse weather, boll rot, and insect damage in much of the Cotton Belt resulted in a steep decline in yields to only 436 pounds of lint per harvested acre in 1969, the lowest since 1957.

Expanded cotton production abroad and increased competition from man-made fibers lowered cotton prices and cut into U.S. ex-


CARRYOVER OF MAJOR FARM COMMODITIES

* CROP YEARS BEGINNING: WHEAT, BARLEY, AND OATS, JULY 1; COTTON, AUGUST 1; CORN AND GRAIN SORGHUMS, OCT. 1.
O PRELIMINARY.

U.S. DEPARTMENT OF AGRICULTURE NEG. ERS 4020-69 (9) ECONOMIC RESEARCH SERVICE


CROP AND LIVESTOCK PRODUCTION

Δ PRELIMINARY.

U.S. DEPARTMENT OF AGRICULTURE NEG. ERS 1357-69 (9) ECONOMIC RESEARCH SERVICE

ports in the 1968–69 marketing year. Domestic consumption also declined due to reduced military needs, a higher level of textile imports, and, most important, a further market expansion for man-made fibers.

The carryover of all kinds of cotton on August 1, 1969, totaled 6.5 million bales, compared with 6.4 million a year earlier, but only a little more than half the 12.5 million bales carried over on August 1, 1967. CCC stocks totaled about 2.9 million bales and privately owned stocks were a little more than 3.5 million bales on August 1, 1969.

The August 1, 1970, cotton carryover is expected to total about 6 million bales, about one-half million below 1969, and the smallest since the early 1950's. Larger planted acreage is in prospect for 1970. The loan rate is unchanged from 1969, but the direct price support payment is higher.

Meat and Eggs

Production of livestock and livestock products rose only slightly in 1969. Beef output was up slightly, and pork production was about the same, but lamb and veal production declined. Output of broiler meat was up substantially, and turkey meat production remained at about the 1968 level.

Supplies of eggs declined slightly in the first half of the year, but rose a little in the second half.

Exceptionally strong consumer demand boosted prices of most livestock and livestock products considerably above 1968 and other recent years. Prices received by farmers for cattle, hogs, and lambs each averaged $3 to $4 per 100 pounds higher than in 1968. Prices of broilers, turkeys, and eggs also averaged higher.

Supplies of meat will likely increase in 1970. Output of beef probably will be somewhat larger than in 1969, as marketings of fed cattle continue to increase; and with the relatively favorable hog-corn price ratio in the second half of 1969, farmers are expected to expand hog production. Output of poultry and eggs is also expected to increase.

Dairy

Milk production in 1969 totaled 116.2 billion pounds, about 1 percent under the 117.3 billion in 1968. Civilian consumption of milk in all forms was about 113 billion pounds, slightly under 1968. Approximately 1 percent of this use was supplied by imports.

The Department took permanent action effective January 1969 to reduce imports of a number of dairy products. USDA removals of butter, cheese, and nonfat dry milk from the market for price support purposes in 1969 were substantial, but below 1968.

Prices received by dairy farmers in 1969 averaged $5.46 per 100 pounds, up 4 percent from 1968.[2]

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[2] For the marketing year beginning April 1, 1970, the support price for manufacturing milk was raised to $4.66 a hundredweight, compared with $4.28 for the previous year.

OTHER PROGRAMS TO PROMOTE INCOME AND ABUNDANCE

Marketing Agreements and Orders

These are voluntary programs, initiated and designed by farmers, which enable producers to jointly improve their bargaining strength, fit supply to demand, and cooperate in solving common marketing problems they cannot solve individually.

As a direct result of the operation of 67 Federal milk marketing orders in calendar year 1969, milk producers gained approximately $350 million in additional income. Producers received an average return of $5.74 per hundredweight under these orders, 21 cents more than in calendar year 1968. Gross income per producer rose to $25,000 in calendar year 1969, compared to $22,000 the year before.

Almost $2 billion worth of fruits, vegetables, and specialty crops were marketed by American farmers under 46 Federal marketing agreements and orders in 1969, an increase of almost 20 percent over 1968.

Cotton producers collected and spent approximately $10 million under their Cotton Research and Promotion Order, to improve their competitive position. This is financed by $1 per bale assessments on upland cotton. Two-thirds of the funds went for sales promotion programs, and one-third for research—of which the heaviest expenditures were aimed at developing a durable press finish for 100 percent cotton fabrics.

Market News

The Federal-State Market News Service supplies up-to-the-minute information on supply, demand, price, and market trends to farmers, marketers, and others in the agribusiness community. The Service issued more than 265,000 different reports during fiscal 1969 covering all farm products.

Market intelligence data are gathered by a coordinated team of approximately 350 Federal and State reporters. This information is then distributed across the Nation through the Department's 22,500-mile, 170-station leased-wire network and released to the public through printed reports, cooperating news media, automatic telephone answering devices, and trade publications. The leased-wire network carries an average of 290,000 words daily, the equivalent of a 300-page book.

During 1969 new daily reports of prices on ready-to-cook turkeys were instituted to offset the declining direct sales of live turkeys caused by contract-growing arrangements. Regular reporting of market news on ornamental crops was begun and national "spot cotton quotations" were computerized.

Matching Fund Program

Through this program, State departments of agriculture receive Federal funds and technical aid in developing and carrying out projects to improve the marketing system. One hundred and sixty-six projects were carried out in 44 States during fiscal 1969.

> Maryland and USDA marketing specialists cooperated in finding buyers and arranging shipment for an unusually large corn crop, 45 percent above local needs, in Maryland's Del-Mar-Va region. This averted a threatened sharp drop in the price of Maryland corn. Despite the surplus, prices stayed above $1 per bushel. It is estimated that Maryland producers received $2,200,000 more for their corn crop than they would have had without this matching fund project.

In Missouri marketing specialists helped State grain elevators achieve annual savings of about $47,000 through successfully negotiating reduced intrastate freight rates for locally grown grain.

Purchase Programs

Through its purchases of foods for donation to needy families, schools, and institutions, the Department bolsters nutrition for millions of consumers and improves farm income at the same time.

More than $330 million in funds allotted from customs receipts (Section 32 funds) was spent in fiscal 1969 for such purchases.

The Department spent another $63.9 million from appropriated funds, some $8.3 million more than in fiscal 1968, to help provide nutritious meals for school children under the National School Lunch Act.

IMPROVING FARM MANAGEMENT

The Cooperative Extension Service carries the primary responsibility of helping agricultural producers adapt new research developments and techniques to individual farming situations.

Improving Farm Marketing

One of the major functions of the Extension Service is to help individual farm producers, as well as firms involved in the processing, distribution, and retailing of agricultural products, improve marketing efficiency.

A series of eight workshops on bargaining was conducted for fruit producers by the Michigan Cooperative Extension Service during the fiscal year, and Wisconsin dairy marketing specialists conducted a nationwide bargaining symposium.

Farm Management

During the year more than 30,000 farmers participated in mail-in electronic accounting programs. Such programs are available to farmers in most States. Extension began testing and experimenting with more sophisticated computer programs which provide information to farmers on the expected consequences of specific actions or investments.

In cooperation with the Virginia Cooperative Extension Service, a project was initiated to demonstrate and test several uses of remote terminals located in county agents' offices and connected with the computer center at Virginia Polytechnic Institute. The Michigan Extension Service is testing the use of remote terminals in county agents' offices for transmitting farm records data to the computer center at Michigan State University.

Statistics for Farmers

Facts on production, supplies, and prices of agricultural commodities are essential for sound decisions.

The USDA's Statistical Reporting Service provides timely agricultural statistics through some 700 Federal and 10,500 State reports issued each year. In 1969 these releases covered about 200 commodities and they were based primarily on 2.75 million individual reports made voluntarily by farmers and businessmen to trained enumerators of the Statistical Reporting Service. The data were collected, summarized, and evaluated in 44 field offices serving all 50 States.

"POLICING" THE MARKET

Regulatory Programs

Reparations totaling over $877,000, nearly $100,000 more than in fiscal 1968, were awarded to aggrieved parties under the Perishable Agricultural Commodities Act, which promotes fair trading in the produce industry. Reparation and disciplinary cases handled during the year totaled 2,758, compared to 2,681 in 1968. In addition, many disputes were settled without resort to formal proceedings.

Enforcement actions under the Federal Seed Act, which requires truthful labeling as to content and germination of seeds shipped interstate or in foreign commerce, nearly doubled in 1969, rising to a total of 1,570.

Licensing activity under the U. S. Warehouse Act continued to increase in 1969, with the issuance of 218 new or replacement licenses and 401 amendments to licenses. The Act assures the integrity of warehouse receipts issued for agricultural commodities so they will be generally acceptable as security for loans and trading purposes.

Significant savings will accrue to agricultural shippers as a result of USDA's active participation in transportation rate and service adjustment proceedings during 1969.

Safeguarding Competition in Livestock, Poultry, and Meat

Through the Packers and Stockyards Administration, the Department strives to maintain fair and competitive marketing at all levels of the livestock, poultry, and meat industries.

Livestock transactions subject to the Packers and Stockyards Act total approximately $15 billion each year, with poultry transactions totaling another $4 billion.

In addition, about $20 billion in meat and dressed poultry transactions are subject to regulation.

The Department's responsibility under the Act covers the operations of about 2,200 public stockyards; 3,000 private livestock buying yards; 3,600 meatpackers; 16,000 livestock commission firms and dealers; and 1,000 poultry dealers and processors.

During fiscal 1969, P&SA received 6,338 complaints involving unfair practices. About $1.3 million was returned to producers in informal settlements of 628 complaints. Another $80,822 was awarded to 20 complainants in formal reparation cases.

Formal action was initiated in 267 cases during the year, 257 cases were completed, and 165 were pending as of July 1, 1969.

The agency also administers the Truth in Lending Act with respect to the firms subject to the P&S Act.

Commodity Exchange Authority

The basic function of the Commodity Exchange Authority is to safeguard producer and consumer interests in the hedging and price-basing services of the commodity futures markets. These services are widely used by farmers, merchandisers, and processors, and affect retail prices paid by consumers. The CEA works to assure open, fair, and competitive trading in futures contracts on commodity exchanges, to prevent price manipulation, and to protect persons trading in futures markets from cheating, fraud, and abusive acts and practices.

> Futures trading in regulated agricultural commodities increased sharply in calendar 1969. The number of futures transactions rose 22 percent over 1968. The value of futures trading in CEA regulated commodities was $80.5 billion, a 34 percent increase over 1968. Record futures markets emerged in a number of commodities, practicularly in livestock and livestock products which were added to CEA regulation in 1968.
>
> Sharp price fluctuations in shell egg futures in December 1969 led CEA to survey the market. Early in 1970 the agency was making further investigation to determine whether price manipulation was involved.

It appears that the record-breaking volume of futures trading set in calendar 1969 will continue through calendar 1970.

COOPERATIVES BRING FARMERS INCREASED INCOME

Cooperatives help farmers sell their products for better prices and enable them to buy needed supplies and services at lower cost. We estimate that farmers add about $500 million annually to their net income from the patronage refunds their cooperatives return to them. There are also important indirect benefits that cannot be easily measured.

Our Farmer Cooperative Service helps farmers and other rural people through research and technical assistance on practical problems. It advises boards of directors and cooperative leaders on finance, membership, management, organization, and other aspects of cooperative enterprise.

During fiscal 1969, FCS completed 57 studies and cooperatives adopted FCS recommendations which, it is estimated, resulted in a $2.5 million increase in the incomes of cooperative members.

> One study indicates that cooperatives, through central processing, can reduce the cost of ginning Oklahoma cotton from $5 to $20 a bale.
>
> Another study, conducted on behalf of a national turkey marketing cooperative, is expected to add an average $1,050 a year to each member's net income.
>
> A study of 21 cooperatives serving 48,000 dairymen in 20 Midwestern States showed that farmers could increase their annual marketing returns by about $28 million after 1 year if they consolidated their operations.

AID IN FARM EMERGENCIES

Special aid programs are necessary to help farmers survive the effects of natural disasters such as drought, floods, fires, hurricanes, tornadoes, and earthquakes.

Federal Crop Insurance

In the 1969 crop year farmers took out more insurance protection against crop failure than ever before. They paid about $49 million in premiums to the Federal Crop Insurance Corporation to insure crop production costs in excess of $900 million.

Indemnities paid to farmers in the 1969 crop year amounted to nearly $56 million, or about $1.14 for each $1 of premium collected.

A small experimental operation in only 375 counties in 1948, FCIC now provides insurance service to 1,425 counties. Several hundred additional counties are on a waiting list to be served when resources permit.

STRUCTURE OF U.S. AGRICULTURE

Helping the Nation's farmers move closer to adequacy, or parity, of income is complicated by agriculture's highly uneven structure. Today, about 200,000 farmers account for roughly half of all U.S. agricultural marketing. Another 300,000 farmers account for about one-sixth of all marketings. The next 500,000 farmers produce and market about one-fifth of the total.

Thus, 1 million farmers out of 3 million market 87 percent of U.S. agricultural commercial output. In general, they operate farms large enough to provide a full-time job, and to return a rather adequate living.

Most of these larger farms continue to be family operated, although some lines of production like cattle feeding and broiler production are becoming more concentrated in industrial-type operations. In addition, there has been some modest increase in field crop production by large corporations.

The most recent study (in 1967) showed that the 500,000 largest farmers as a group had returns from their labor, management, and investment equalling the returns earned by similar resources in other occupations. Another 500,000 farmers were within striking distance of this parity income goal.

The far more numerous small farmers, making up about two-thirds of all operators, had far below parity returns from farming. Farms with sales of less than $5,000 per year earned only 30 to 40 percent of a parity income. To achieve adequate family living, these low-income farmers in many cases supplemented their incomes with nonfarm earnings. Families on farms with sales of $2,500 to $4,999 per year receive more than two-thirds of their total income from off-the-farm earnings, while farms with less than $2,500 in annual sales get about six times as much income from off-farm activities as from farm operations.

Some 3 million individuals reported farm earnings on their Federal income tax returns in 1966. Of these, only 1.2 million reported farming as their major income source. One-fourth of those with farm earnings reported *combined* farm and off-farm income of less than $2,500. Half reported less than $5,000. Nearly one-third reported $5,000 to $9,999, and one-sixth $10,000 or more.

These facts indicate the necessity of developing programs and other activities which will enable people on U.S. farms to attain as soon as possible a fair share in American prosperity.

AGRICULTURAL FOREIGN TRADE

> *"In transactions of trade it is not to be supposed that, as in gaming, what one party gains the other must necessarily lose. The gain to each may be equal. . . thereby the common stock of comforts in life is increased."*
>
> Benjamin Franklin

When this Administration took office the seller's market that had swept U.S. agricultural exports to an all-time high in 1967 had given way to a buyer's market, causing a drop in both U.S. exports and total world trade.

The major trading nations of the world were overstocked with agricultural products: Wheat, feed grains, oilseeds, citrus products, and many others. We found a strong protectionist trend abroad, with the developed nations seeking to produce more of their own supplies and the developing nations striving to expand agricultural production for export.

Economic conditions around the world, however, were generally good, bringing strong demand for feed grains, soybeans, and protein meal, rice, poultry, fresh fruits and vegetables, and convenience foods.

We moved deliberately yet aggressively in the foreign trade work of the Department in 1969 with positive steps to promote exports, intensified efforts to gain access to more markets with more farm products, and a strengthening of our agricultural intelligence network abroad.

RECENT TRENDS IN U.S. AGRICULTURAL EXPORTS

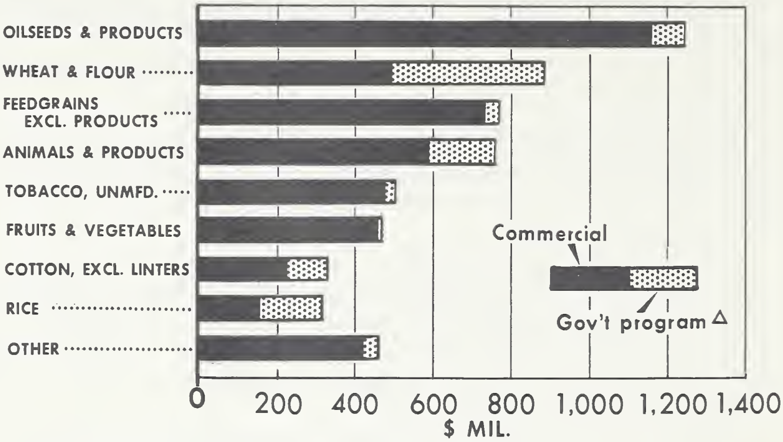
The value of exports for the fiscal year ending June 30, 1969, declined for the second year in a row to $5.7 billion, compared with $6.3 billion in 1967–68. However, there were indications that exports in 1969–70 will reverse the downward trend of the past 2 years.

The fruits of our intensified efforts began to show during the last half of 1969. U.S. agricultural exports for the period July-December ran 6 percent ahead of the same period a year earlier. It appeared that exports for the full 1969–70 year would approximate $6.1 billion.

As of December 1969, the outlook was brightest for soybeans where an increase of 50 million bushels for a total of 340 million bushels was anticipated. Total export of soybeans and soybean products was forecast at $1.3 billion, making soybeans by far our *number one* dollar export earner.

It was estimated that wheat exports would rise about one-tenth above the previous year's 544 million bushels, perhaps reaching 600 million. Corn exports for the 1969–70 marketing year are projected to rise about 5 percent from the 536 million bushels of a year

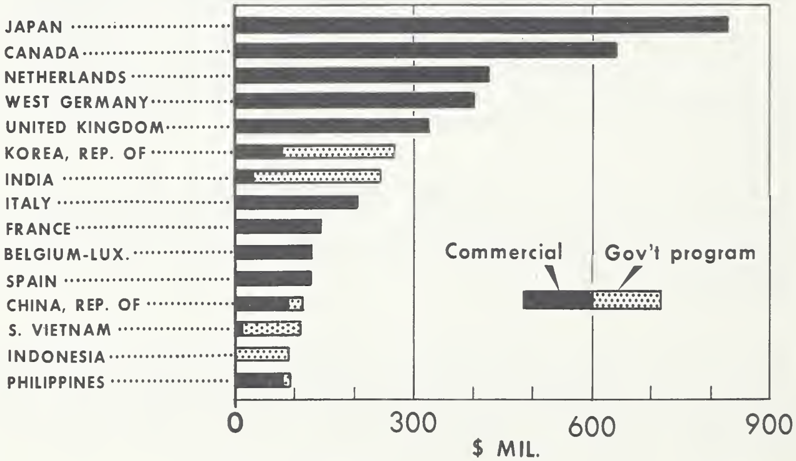
U.S. AGRICULTURAL EXPORTS, BY COMMODITY GROUP, 1969 *



* YEAR ENDING JUNE 30. △ GOVERNMENT-FINANCED PROGRAMS, P.L. 83-480 and P.L. 87-195.

U.S. DEPARTMENT OF AGRICULTURE NEG. ERS 2906-69 (9) ECONOMIC RESEARCH SERVICE

U.S. AGRICULTURAL EXPORTS, BY COUNTRY, 1969 *



* YEAR ENDING JUNE 30.

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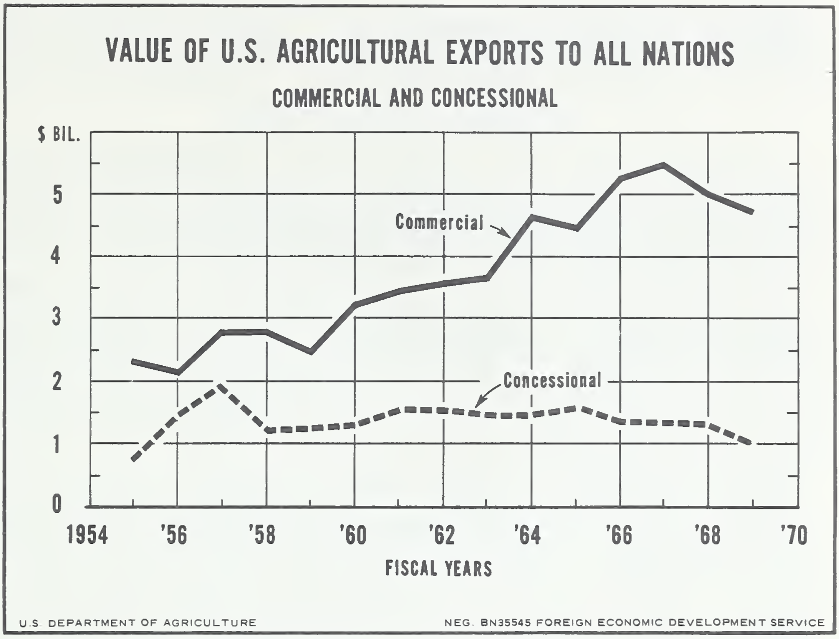
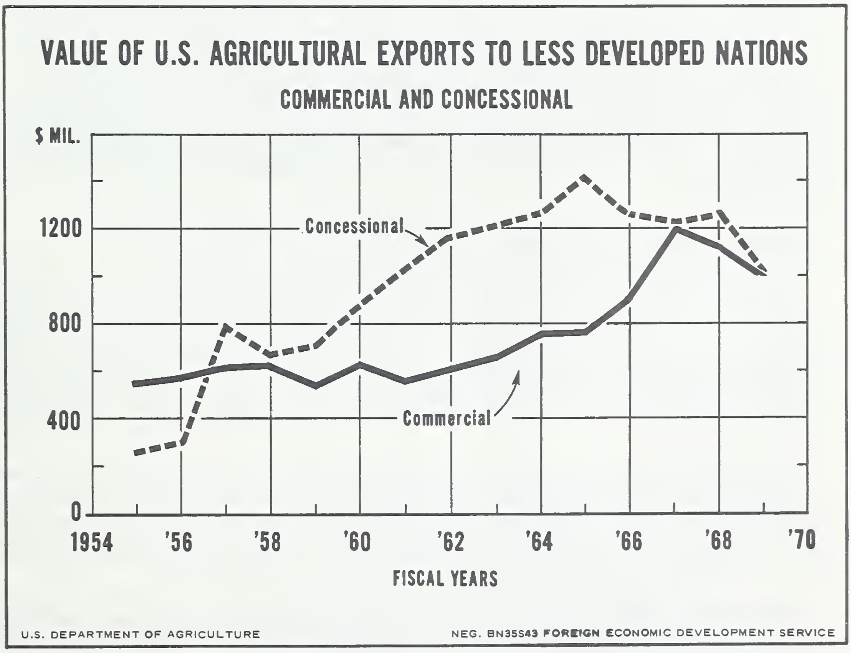


VALUE OF U.S. AGRICULTURAL EXPORTS TO ALL NATIONS

COMMERCIAL AND CONCESSIONAL

U.S. DEPARTMENT OF AGRICULTURE

NEG. BN35545 FOREIGN ECONOMIC DEVELOPMENT SERVICE



VALUE OF U.S. AGRICULTURAL EXPORTS TO LESS DEVELOPED NATIONS

COMMERCIAL AND CONCESSIONAL

U.S. DEPARTMENT OF AGRICULTURE

NEG. BN35543 FOREIGN ECONOMIC DEVELOPMENT SERVICE earlier. Cotton exports, however, were forecast at the very low level of 2.5 million bales, reflecting, among other factors, the competition of man-made fibers and small U.S. crops.

BUILDING EXPORT LEVELS

One of the first major export problems confronting the new Administration was the unsatisfactory functioning of the International Grains Arrangement, which had been adopted in an effort to stabilize world wheat trade and strengthen export prices.

Between the time when this Arrangement was drawn in 1967 and its effective date, July 1, 1968, world wheat production and exportable supplies climbed to record levels and import needs dropped. Because of the pricing system provided in the Arrangement, the United States found itself at a disadvantage in competition with other suppliers, and a serious decline in our forward export sales took place.

After taking office in January 1969, we immediately made plans to meet with other exporters to consider emergency action. A series of meetings followed at which various emergency proposals were considered. No other exporter was willing at that time to back the United States in initiating the procedure called for in Article 8 of the Arrangement to deal with instability in the wheat trade.

Ultimately, however, it was generally recognized that corrective action needed to be taken to bring prices into proper competitive relationships. At this point, the United States adjusted its prices and began a process of making its wheat competitive with that of other suppliers. All major exporters then made varying price adjustments which brought the general level of world prices to a point substantially below the minimums of the Arrangement. Following this, major exporters convened again to work toward improving communication and preventing further deterioration in price levels.

Sprouted Wheat Problem

In late October and early November 1968, reports reached the Department that some recent arrivals of U.S. wheat in Japan contained sprouted wheat. The problem arose because of untimely rains that affected the 1968 wheat harvest in a large portion of the wheat producing areas of the Pacific Northwest and Northern Plains States.

While this wheat met the official U. S. Grain Standards, some of it presented such serious problems to Japanese millers and end users that it had to be diverted to use as livestock feed. As a result, the Japanese Food Agency halted U.S. wheat purchases, which amounted to about $140 million a year.

To re-establish this trade, the Department took the initiative in starting negotiations with U.S. exporters and Japanese Food Agency representatives. This led to a decision to compensate the Japanese with a gift of wheat provided both from trade sources and from CCC stocks. Tied to this agreement was the Food Agency's commitment to resume buying from us. Japan re-entered the market on January 24 and by the close of the fiscal year had purchased $112 million worth of U.S. wheat.

Market Development

The Department continued to work actively with over 60 established market development cooperators—commodity organizations which do extensive overseas promotion under joint financing arrangements with Government.

This program has shown unique usefulness in helping meet the fierce competition for old markets within the recent past and is pushing sales into new areas.

The work of Western Wheat Associates in Taiwan helped U.S. wheat growers survive a serious price war in Taiwan last year without undue loss of our market. When several new suppliers made offers at cut prices, our cooperator pressed the case for sticking with the United States as a dependable, long-term supplier. As a result, we were able to hold a healthy 82 percent of the Taiwanese wheat market.

The promotion program for rice helped us hold markets which might otherwise have been lost. Overall, commercial rice exports dropped off in fiscal 1969 by 20 percent, but in the seven countries where promotion has been carried out on a continuing basis, the drop was a mere 1 percent.

New markets for Florida citrus juice were further developed in fiscal year 1969 when export sales hit 8.4 million gallons—some 35 percent above the amount sold in 1968—despite weather and shipping difficulties that had threatened to make it a bleak year. The promotion program for this product is carried out with the Florida Citrus Commission and returns $14 in benefits for every $1 of Government cost.

A joint project with the National Renderers Association succeeded in getting the Government of Mexico to lift its embargo on imports of inedible tallow from the United States, opening up a potentially valuable market.

Strong promotional efforts were also mounted for U.S. feedgrains, soybeans and soybean products, poultry, cotton, breeding cattle, fresh and canned fruits, navy beans, seeds, and other agricultural products.

In its International Food Exhibits Program, the Department shifted emphasis from large international food shows for the trade and public to smaller "trade only" shows which can be staged at less expense and pinpointed to key food buyers.

As one thrust of this new policy, a round-the-world series of eight food exhibits and food preparation seminars was held for institutional food buyers—hotels, ship chandlers, airline caterers, and other users of high-quality food packed for quantity and convenience. These were staged in Kyoto, Japan; Tokyo; Hong

Kong; Singapore; Bangkok; Tel Aviv; Basel, Switzerland; and Salzburg, Germany. At the end of the tour, U.S. exhibitors reported on-the-spot sales of $300,000 and potential sales of $5.5 million during the coming year.

In June 1969, for the first time, the USDA presented an Overseas Executive Food Buyers Conference, in cooperation with the Super Market Institute, one of the major trade associations of the food industry. This event brought more than 100 of the world's top food buyers to Atlantic City, N.J., to view the Nation's largest exhibit of processed foods, attend special seminars, and talk business with American representatives. The event is being repeated in 1970 at Houston, Texas.

A special office was established in the Foreign Agricultural Service to work with the State governments, transportation agencies, port authorities, and other groups with a stake in agricultural exports. One important development of the year was the formation of MIATCO—a group of 12 midwestern States formed to participate in export development.

Overcoming Trade Barriers

During 1969, we expanded our efforts to improve export possibilities for U.S. agriculture in the European Community, our most important single market, through high level bilateral talks covering broad policy issues as well as specific commodity problems. In the commodity area we voiced strong opposition to the Community's high variable import levies and its policy of subsidizing exports, and to proposals for a tax on soybeans, for minimum import prices on canned fruit, and trade restrictive regulations on tobacco. We made it clear that any such impairment to our trade rights will bring immediate U.S. countermeasures.

To bring home to the Community and Denmark our dissatisfaction with their export subsidies, we maintained subsidies of our own on poultry exports to Switzerland, and in December 1969 initiated a similar program to Greece. A subsidy on lard to the United Kingdom was inaugurated to meet the same kind of competition.

U.S. poultry exports to Switzerland, which had been down to 2.1 million pounds in 1967, recovered to 7.4 million pounds in 1968, and rose to 13.6 million pounds in 1969.

More than 121 million pounds of lard were shipped to the United Kingdom, representing good progress in the effort to regain our traditional share of the British market.

We have told the Community that we will end these subsidies when it does, and late in 1969 the Community did make some reduction in its lard subsidy, which permitted a reduction in ours without endangering the U.S. competitive position.

Foreign Agricultural Service personnel continue to work through participation in the GATT Agricultural Committee on long-range agricultural trade problems and through GATT ad hoc

Swedish housewives inspect U.S. fresh fruits and processed foods at USDA-sponsored store promotion in Stockholm.

Wheat exhibit features pancakes, waffles, and other wheat products at U.S. food exhibit at Tokyo's 1969 International Trade Fair.

working parties, such as those on poultry and dairy, to resolve urgent trade problems in specific commodities.

Acting outside GATT as well as within, the United States has consistently pushed for greater access to foreign markets throughout the world, often with success. Here are some examples of success during fiscal year 1969:

> Austria eliminated its "licensing fee" on imports of vegetable protein feeds, including soybean meal, after the United States threatened retaliation.
>
> Denmark liberalized imports of peas, broccoli, certain meats, and other products.
>
> Finland exempted licensing requirements during certain seasons on an extensive list of products, including certain fresh fruits and vegetables, and some fruit and vegetable juices.
>
> Japan increased quotas for fresh oranges and grapefruit, soybean meal, vegetable oils, and other products. Japan also agreed to remove half its import duty on soybeans as of April 1, 1970.
>
> The Philippines lowered duties on soybean meal and other feed ingredients.

The Agricultural Attachés

In the forefront in trade relations activities are the agricultural attachés, stationed at 51 posts throughout the world. They are the principal eyes and ears of a foreign market intelligence service that reports on more than 100 countries. Their job is to keep abreast of agricultural trade and to promote market development in the countries for which they are responsible.

An agricultural attaché was assigned to Taiwan for the first time in recognition of the growing importance of that country as a commercial market. With the stabilization of the Indonesian Government, that attaché post was reestablished.

THE IMPORT PROBLEM

To preserve the integrity of the U.S. position in seeking to gain trade access to other countries, we have had to move carefully regarding the access of these nations to the United States.

Meat Imports

The Meat Import Law, for example, is designed to protect U.S. livestock producers, principally cattlemen, against price depressing pressures that could result from uncontrolled imports, yet to offer historic suppliers a chance to share in the growth of the U.S. market. Under the law import quotas are to be imposed whenever it is estimated that imports of specified meats (principally beef and veal) will reach a point defined as excessive in relation to U.S. production.

The trigger point has never been reached, but it appeared close in the final months of 1968. Major foreign suppliers undertook to hold down their shipments to forestall quotas. This system of voluntary restraints prevailed during 1969.[3]

Dairy Imports

In the case of dairy products, import quotas have been in effect for a number of years. These controls, which had been tightened in 1967, were extended in January 1969 to cover all dairy products except a few high-priced cheeses and other minor items. Bringing on this action was the high level of production in West European countries and other countries which led to surpluses that sought an outlet in the U.S. market at extremely low prices.

The world dairy situation is being kept under continuous review. We are prepared to recommend whatever action may be necessary to protect the U.S. interest.

HELPING NATIONS GROW

Overall economic development in the emerging nations depends largely on the success of efforts to solve their food problems.

When P.L. 480 was enacted, easing the food problems of the needy nations was seen mainly in terms of food transfers—moving vast amounts of grain from the surplus-producing regions to the grain-deficit regions. But it has become clear that transferring food alone is no lasting solution. Increasing emphasis, therefore, has been and is being placed on encouraging agricultural progess within the developing countries to enable them eventually to provide for themselves far more of their essential food needs.

The Department, in cooperation with the Agency for International Development, is active in this effort on four major fronts: (1) Development strategy and policy, (2) technical assistance and research, (3) international nutrition improvement, and (4) training of foreign nationals. Our international development activities are coordinated by the recently created agency, the Foreign Economic Development Service (FEDS).

Development Strategy and Policy

An Economic Research Service project completed in 1969 studied the factors associated with progress in agricultural production in underdeveloped countries. Three reports from this project were published: "Taiwan's Agricultural Development," "Accelerating India's Food Grain Production," and "Growth of Crop and Livestock Output in Selected Developing Nations." The Taiwan report, an intensive study of agricultural productivity in a developing nation, is a significant contribution to understanding the general development process. Other studies carried out under the project provide similar insights.

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[3] The "trigger" point is 110 percent of the import quota level (fixed by law at 725.4 million pounds) adjustable in proportion to the increase or decrease in U.S. meat production subject to the law from the 1959–63 average to the latest 3 year average.

A study of demand prospects for the farm products of less-developed countries presented data on the trade flow of commodities accounting for 80 percent of the world's agricultural exports and 33 percent of the exports of less-developed countries. A computer model was developed to allow continuing updating of demand projections as new data are fed into the system. These projections will be vital in planning agricultural development in the developing nations.

> USDA economists cooperating with AID and a private consulting firm developed an agricultural sector study in EL Salvador. It provides basic information for planning EL Salvador's future agricultural development. Other USDA specialists are helping the Government of Colombia plan agricultural development.

Technical Assistance and Research

The significant breakthrough of recent years in world food production is highlighted by the use of new high-yielding varieties of rice and wheat, mainly in the hungry nations of Asia.

Introduced only 5 years ago, the new wheat and rice varieties are now planted on nearly 30 million acres, representing approximately 16 percent of the wheat acreage and 7 percent of the rice acreage in noncommunist Asia.

The new varieties require a sophisticated approach to cultivation, water management, harvesting, storing, and marketing—advances that are generally unknown in traditional agriculture. Technical assistance to help modernize traditional agriculture is urgently needed, therefore, if the "green revolution" is to reach its potential.

More than 400 USDA specialists worked on over 100 agricultural improvement projects in the developing nations in 1969.

The Department's largest technical assistance team is in Vietnam where specialists cooperate with local officials and the AID Mission to help increase rice, poultry, and pork production; improve seed varieties; and make cooperatives and credit institutions more effective. USDA specialists currently in Vietnam are drawn from the Extension Service, Agricultural Research Service, Farmers Home Administration, Forest Service, Statistical Reporting Service, and the Foreign Economic Development Service.

> With USDA technical assistance in production and the introduction of new high-yielding rice varieties, Vietnam is likely to reach rice self-sufficiency in 1971. More than 200,000 hectares of high-yielding IR–8 rice variety have been planted, and it is estimated that the 1969–70 crop will exceed the previous year's output by 360,000 metric tons of milled rice.
>
> To enable the Vietnamese to take better advantage of new varieties, USDA technicians designed new rice drying equipment.

A USDA rice production demonstration team in Senegal combined good water control with improved seeds, fertilizers, and pesticides and thereby obtained a four-fold increase in annual production over native varieties. Now the farmers of Senegal are beginning to accept modern rice production practices.

Market news services are needed to help farmers decide when and where to sell their products. Brazil, which recently established such a service with USDA/AID assistance, is being used as a model for similar services in other countries.

As agriculture develops, credit becomes more important. USDA technicians are helping host governments improve credit programs in EL Salvador, Vietnam, Nigeria, and other nations.

In India during 1969, Department specialists gave continuing assistance to the Indian Food Corporation which is responsible for building up food grain stocks and supporting farm price at levels which will encourage production. Twenty Soil Conservation Service specialists helped the Indian Government develop and improve national and regional soil and water conservation practices.

Our Agricultural Research Service is currently conducting several studies funded by AID.

A team in Africa is working on control of the tsetse fly, the main obstacle to increased livestock production in East Africa and carrier of sleeping sickness which is deadly to man as well as to animals. One control method looks promising: The mass release of sterile males which prevents fly reproduction.

Department scientists in Iran and India are cooperating with Asian scientists to develop superior high protein, edible pulse crop varieties for South Asia. In India, pulses yield 300 to 700 pounds per acre, compared with yields of 1,300 to 1,800 pounds elsewhere. India's production of these crops must increase 60 percent during the 1970's. Several strains of beans, chickpeas, and cowpeas have been outstanding in yield tests and have been recommended to the Ministry of Agriculture for release to farmers. Improved cultural practices which can increase yields as much as 400 percent have also been recommended.

International Nutrition Improvement

Fortifying cereal grains with essential amino acids, such as lysine, or with protein concentrates from oilseeds and other crops can be an important factor in easing the widespread protein deficiency in diets. The Department, AID, and Harvard University, in 1969, began a study of the effects of wheat fortified with minerals, vitamins, and lysine on the health and economic and social activities of 70,000 rural Tunisians.

With USDA technical assistance, AID is supporting a research project in Thailand to forify rice with lysine. Partly as a result of USDA/AID assistance, Government of India bakeries are marketing "Modern Bread," fortified with lysine, which upgrades protein quality of the bread. The Government of Peru has issued an executive order calling for fortification of cereal grains.

Rice specialists work together on USDA/AID rice demonstration project in Senegal.

"Modern Bread," fortified with vitamins and lysine to improve protein quality, is sold in India.

Increased attention is also being given to developing new foods that are high in protein. Twelve contracts have been signed by AID and U.S. companies to carry out market research on the commercial possibilities of high protein foods in developing nations.

General Mills is working on a tortilla mix fortified with soy and corn for Guatemala; Swift and Co. is working on a beverage for Brazil; and International Milling has a contract to help produce a fortified wheat product for Tunisia.

Training Foreign Nationals

Over 4,000 foreign agriculturists receive U.S. training arranged by USDA each year, over half of them from the developing countries. This is extremely important, as trained manpower in agriculture is critically needed. Universities in the developing nations, it is estimated, have graduated only 20,000 trained specialists in agriculture during the past decade.

To bring the level of trained manpower in agriculture up to the recommended goal of one expert for every 2,000 farm people, the developing countries would need 400,000 trained technicians. The situation is improving, however; more trained personnel are being turned out and many former participants in the U.S. training programs are appearing in the upper echelons of the ministries of agriculture in the emerging nations.

Most of the 70 land-grant universities and a substantial number of commercial companies and foundations help the Department and AID in these training programs. Many of the training participants work toward academic degrees at the land-grant universities.

> The Department set up some 40 special training courses in 1969, including those for a high-level Indonesia team in agricultural research; a group of Indian agricultural administrators; several credit and banking teams from Brazil; and two teams studying agricultural market news, also from Brazil.

The Department intensified its efforts in 1969 to make U.S. training more relevant to the conditions of developing nations. New training courses were made available in rice and wheat marketing, and livestock production for the tropics. More graduate theses for foreign nationals based on home-country research were encouraged. Seminars with foreign nationals on population control and family planning were continued. Since June 1968, some 375 agricultural technicians from 37 countries have taken part in the population seminars. Also receiving greater emphasis were studies in administrative management and the economic development process.

TOWARD BETTER NUTRITION

> *"It is one of the major tasks confronting the American people to eliminate malnutrition whether it be caused by the curse of poverty or the blight of ignorance."*
>
> PRESIDENTIAL PROCLAMATION OF NATIONAL SCHOOL LUNCH WEEK, 1969

FEEDING THE HUNGRY

During 1969 the Nation became much more aware than ever before of the existence of a hunger problem in America. As a result, feeding the poor and improving nutrition in all income groups throughout the Nation received greatly increased emphasis. The Administration established the largest, most comprehensive effort to strike at hunger and malnutrition ever advanced in America.

To administer this intensified war on hunger, the Department established on August 8, 1969, a new agency, the Food and Nutrition Service, whose exclusive concern is the administration of the Federal food programs for children and needy adults. The new agency permits greater specialization and concentration on the effective administration of the food programs.

Assistance to Needy Families

Major emphasis was directed toward reaching more low-income families through the Food Stamp Program and the Commodity Distribution Program.

> Early in 1969, of the approximately 3,129 counties and independent cities in the Nation, 485 had neither of these food programs.
>
> As of December 31, 1969, all but 279 counties and independent cities either had or had applied for a Food Stamp Program or a Commodity Distribution Program.
>
> By July 1, 1970, we expect one or the other of these programs to be operating in every county and independent city of the United States.

In terms of individuals assisted, 3.4 million persons were increasing their purchasing power with food stamps as of December 31, 1969—700,000 more than a year earlier. Some 3.6 million persons were receiving donated foods through the Commodity Distribution Program at the end of 1969—about 89,000 more than in 1968.

To test the impact on participation of issuing free food stamps to persons with little or no income, a pilot free stamp project was initiated in two South Carolina counties. The results were encouraging; therefore the USDA recommended to Congress that authority and funds be provided to permit issuing free food stamps to the very poorest families—some of whom have not been able to pay even the nominal cost of food stamps.

When the Agricultural Appropriations Act was signed, providing $610 million for operating the Food Stamp Program for the year ending June 30, 1970 (the amount expended during the previous year was $251 million), a major expansion of the program was promptly announced.

Food stamp schedules were to enable all income groups, including the lowest, served by the program to buy a more adequate diet. The payment schedule was set so that participating families will receive sufficient food coupons to pay for a nutritionally adequate "economy diet."

Under the new schedules, a family of four receives $106 worth of food coupons each month—an 83 percent boost over the previous minimum of $58 a month. Coupon allotments are now also set at a uniform level nationally, eliminating the separate schedules that had been used for North and South.

A family of six persons receives a $144 monthly stamp allotment and a family of eight persons a $180 allotment.

The amount that a family pays for its food stamp allotment has been reduced as far as possible within the scope of the present law. A four-person household with a net monthly income of less than $30 per month would pay $2 and would receive coupons worth $106. For four-person households with larger monthly incomes the purchase requirements would be higher. A household with a net monthly income of $90 to $99.99 would pay $22 for $106 worth of coupons. A household with an income of more than $230 but less than $250 would pay $66, and a household whose income was more than $360 but less than $390 would pay $82.

These improvements make the Food Stamp Program much more beneficial to persons eligible to participate. The Food and Nutrition Service and other cooperating agencies have a vigorous outreach campaign underway with the objective of acquainting all eligible participants with the major benefits now available under the Food Stamp Program.[4]

Other Feeding Programs

Some dramatic increases in the scope of the Department's child feeding programs also took place during the 1969 fiscal and calendar year.

A pilot project—aimed at rectifying nutritional deficiencies of pregnant mothers and infants—was initiated. This program of supplementary food donations provided over 10 million pounds of selected nutritional foods during calendar 1969. By December 31, 1969, over 80,000 persons in 157 areas of 27 States and the District of Columbia were taking part in the program.

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[4] A spot check early in 1970 of 48 representative areas showed participation up by 27 percent in the first month after implementation of the new schedules.

Shopping with food stamps improves nutrition for millions of Americans.

Preschool and schoolage children are improving their diets through USDA Child Nutrition Program.

More than 21.0 million children received nutritious low-cost lunches in 77,000 schools under the National School Lunch Program. Most youngsters pay about half the actual cost of their lunch.

In 1968, Congress authorized additional funds to finance free or reduced price lunches for needy children, primarily in innercity and isolated rural areas. At the end of fiscal year 1969, over 4 million children were receiving such lunches.

The School Breakfast Program, which was started as a pilot project in 1967, provides breakfasts in schools that have high proportions of needy children or children who must travel long distances to attend. These breakfasts, based on USDA nutritional standards, include fruit or juice, milk, and bread or cereal—with eggs or meat served as often as possible. They are usually priced at 10 to 15 cents, with needy children served free. Nearly 300,000 youngsters—130,000 more than in fiscal 1968—were served in about 3,000 schools in fiscal 1969.

A newly authorized Special Food Service Program for children was launched, reaching over 300,000 preschool and school-age youngsters in nonschool groups by the end of the fiscal year. These children were not reached previously by regular USDA child nutrition programs; many were year-round participants in day-care centers, settlement houses, and recreation centers in neighborhoods with high percentages of working mothers. The program proved particularly beneficial, also, to a sizable number of school-age children participating in summer recreation activities at schools were the regular lunchrooms were closed.

Despite all these forms of assistance, there are still sizable gaps in our child feeding programs. Only about three-fourths of the Nation's public elementary and secondary schools participate in the National School Lunch Program. And only 21 million children out of a total enrollment of 51.7 million receive the lunches. It is estimated further that the number of needy children in the Nation's schools is about 6.6 million. Only a little more than half of these were receiving lunches at the end of calendar year 1969. We hope to reach all 6.6 million before Thanksgiving 1970.

NUTRITION EDUCATION

Inadequate nutrition often results from bad management of family resources, ignorance, misinformation, poor food buying, faulty preparation of food, and a failure to understand the relationship of nutrition to health.

While the need for nutrition education extends into all segments of the population, it is particularly acute among low-income families. Experience has shown that these hard-to-reach families can be taught the knowledge and skills required for good nutrition through individual and small-group teaching.

As of the end of the calendar year, 5,242 persons were working for the Cooperative Extension Service as nutrition aides, the largest number since the program began. Over 8,000 aides were trained and worked in the program at some time during the year. These workers were recruited from within depressed areas. Many were previously unemployed and more than 60 percent were from minority groups. They were given special intensive training which enabled them to teach food buying, meal planning, and budgeting to their low-income neighbors.

As of the end of December, 159,906 families (containing 766,551 persons) were participating in the Food and Nutrition Education Program. This compares with 28,433 families at the end of February and 120,061 families at the end of June. Because of the enrollment of new families and withdrawal of others from the program, we estimate that more than 225,000 families containing over a million persons participated in the Food and Nutrition Education Program at some time during the year. In addition, considerable program activity was devoted to contacting or working with a large number of families not actually enrolled in the program.

Our surveys indicate that seven out of 10 families in the program had annual incomes of less than $3,000; three out of 10 were white, three out of 10 received public assistance, 53 percent lived in urban areas, and one out of three of the homemakers had less than an 8th grade education.

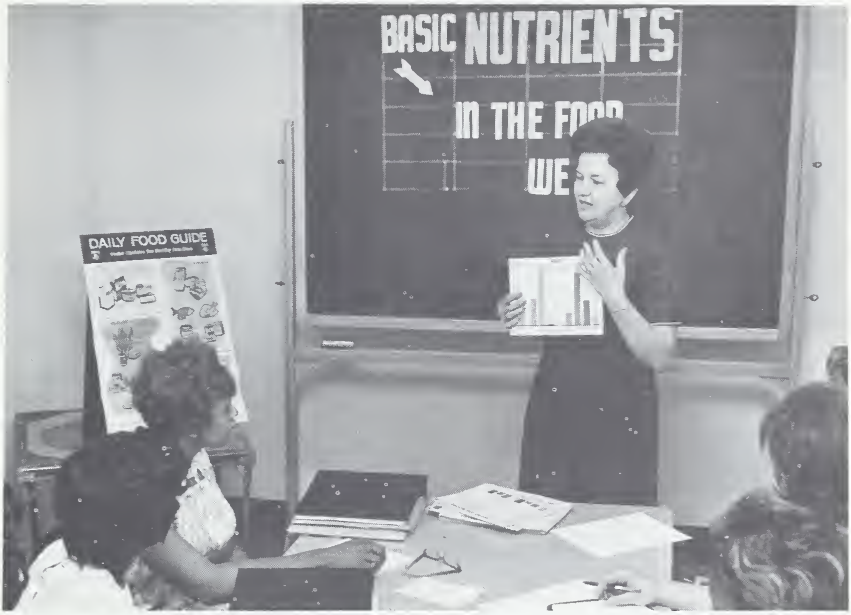
The nutrition status of these families was measured by a 24-hour recall of food consumed the previous day. The first such measurement, taken in March 1969, showed that only 7 percent of the families received the minimum required number of servings of food from the four basic food groups considered essential for adequate nutrition; only 51 percent had at least one serving of food from each food group. The second recall, taken in September 1969, showed figures of 15 percent and 69 percent, respectively, representing a significant improvement.

Case Histories Show Progress

Though the program has been operating only a short time, many interesting and satisfying case histories can be reported:

> Aides in one urban area teach low-income homemakers better nutrition through a new twist to an old method—cooking schools. The aides go from door to door inviting women to attend demonstrations on how to cook foods received through the Commodity Distribution Program. One participant commented, "Now we won't have to throw away any of this food. It's a shame to waste it. Nutrition is what we need to know about."
>
> The cooking schools begin at 11 a.m. and continue until the food is cooked and served. The women watch the aides prepare the dishes, and they receive recipes to take home.

An important area of the nutrition aides' work is providing tips on food buying. Sometimes an aide goes to the food store with a homemaker and assists her in the actual selection of foods, giving particular attention to quantities and prices.



A professional home economist explains the importance of good nutrition to a group of aides.

This nutrition aide is giving good shopping tips to a group of homemakers.

The aides have found that teaching meal planning not only improves nutrition, but also helps family finances. By planning her meals and grocery list, one homemaker saved enough in 1 week to buy sweaters for two of her seven children.

Some Extension program aides are able to make their time and talents go a little further by training volunteers to carry on similar programs.

> A program aide, working directly with families in one urban area, reports that 159 girls from a low-income housing unit are being reached, with the assistance of adult leaders from the housing unit and 10 4–H junior leaders. The aide conducts weekly training meetings for the adult and junior leaders. She has gained full acceptance in the unit and is even provided meeting facilities by the management.

In addition to their teaching, the nutrition aides often help bring other public services to the families with whom they work. A family without food or money, or one that is facing crippling personal problems, is not receptive to education of any kind. The aides, therefore, help put these families in touch with agencies equipped to handle these difficulties.

With the continued development and expansion of the Nutrition Aide Program, an enormous impact can be achieved where it is most needed.

OTHER FOOD SERVICES

The people of the United States have the safest, cleanest, highest-quality food in the world—largely because of USDA inspection and standards and grading programs.

Meat and Poultry Inspection

Under the Wholesome Meat Act effective December 15, 1967, every State was given 2 years to establish a meat inspection system for plants operating wholly within a State. The Act authorizes the Secretary of Agriculture to grant a 1 year extension to a State if it has shown significant progress toward meeting the requirements.

By the end of calendar year 1969, the systems in three States had been evaluated as being at least equal to the current Federal inspection system, 46 States had been given a year's extension, and plans were underway to place the meatpacking plants in one State under Federal inspection.

Along with efforts to administer the Wholesome Meat Act as it applied to States, the inspection of Federal meat and poultry plants continued to expand.

> There were 3,178 meatpacking plants and 936 poultry packing plants under Federal inspection in 1969, compared to 2,860 meat plants and 917 poultry plants in 1968.

> About 80.4 billion pounds of meat and meat products were produced in inspected plants, compared to 76.1 billion pounds in 1968.
>
> Poultry inspection and reinspection volume totaled 20.1 billion pounds in 1969, compared to 19.6 billion pounds in 1968.

The review of foreign meat inspection systems was also substantially increased, to ensure that imported meats receive the same degree of scrutiny required of domestically produced products. About 2,260 visits were made to foreign meatpacking plants in fiscal 1969—compared to 643 in fiscal 1968—resulting in over 800 plants being removed from the list of those eligible to ship meat to the United States.

The advance approval of labels to be used on meat and poultry products is another important phase of the inspection program. In fiscal 1969, the number of labels receiving approval jumped to over 102,000—38 percent higher than in 1968; also in fiscal 1969, nearly 6,300 were rejected for noncompliance compared with about 5,900 the prior year.

Grading and Standards

Official USDA grades measure the quality of agricultural products for producers, processors, retailers, and consumers. Grading is provided upon the request of the processors or sellers and is paid for by them at no cost to taxpayers.

> In fiscal 1969, official grades were applied to 80 percent of the chickens sold commercially; 64 percent of the beef; 67 percent of the lamb and mutton; 69 percent of the butter; and 20 percent of the shell eggs.
>
> In addition, Federal graders inspected for quality and wholesomeness 77 percent of the Nation's production of processed liquid eggs; 87 percent of the dried eggs; 80 percent of the frozen fruits and vegetables; 40 percent of the canned fruits and vegetables; and 46 percent of the nonfat dry milk.

Of particular significance is the fact that more than 17 billion pounds of meat was federally graded during the year, the highest in the 41-year history of the meat grading service. This 1.8 billion pound increase over fiscal 1968 indicates the expanding acceptance of grading by consumers, retailers, and the meat trade.

The volume of fresh fruits and vegetables inspected also reached an alltime high, totaling nearly 56 billion pounds, or 11 percent more than in 1968.

Other grading services include the official grading and inspection of grain products. In fiscal 1969, two-thirds of the grain coming under the U.S. Grain Standards Act was marketed by grade, as was 95 percent of the rice, peas, and lentils; 35 percent of the beans; and all of the hops.

Obviously, these grades and grading programs are valuable only if they are based on nationally recognized standards of quality that realistically reflect today's marketing needs. Nationally uniform standards ensure that the grade mark on a product always means the same anywhere in the country.

Of nearly 600 standards currently established, USDA quality experts developed 55 new and revised standards in fiscal 1969, to keep the grading system in step with changing marketing conditions. They also worked with the Codex Alimentarius Commission, which operates under the auspices of the United Nations. Just as official USDA standards aid the American marketing system, so, too, international standards can increase marketing efficiency in the world community.

U.S. FOOD IS A GOOD BUY

While there is more hunger and undernutrition in America than had previously been believed, it is also true that the blessings of food abundance are enjoyed by most of our people to an extent unequalled anywhere else in the world.

American consumers today spend a smaller share of their income for food than ever before—only 16½ percent of disposable income in 1969, compared with 20 percent a decade earlier.

> An hour of factory labor in the United States in 1969 bought 2.5 pounds of roundsteak, compared with 2.1 pounds in 1957–59—or 10 quarts of milk, compared with 8.5 quarts. An hour of factory labor in 1969 bought 1½ dozen more eggs than in 1957–59, or 3 more loaves of bread, a pound more butter, or 4 pounds more margarine, or an extra ½ pound of pork chops.

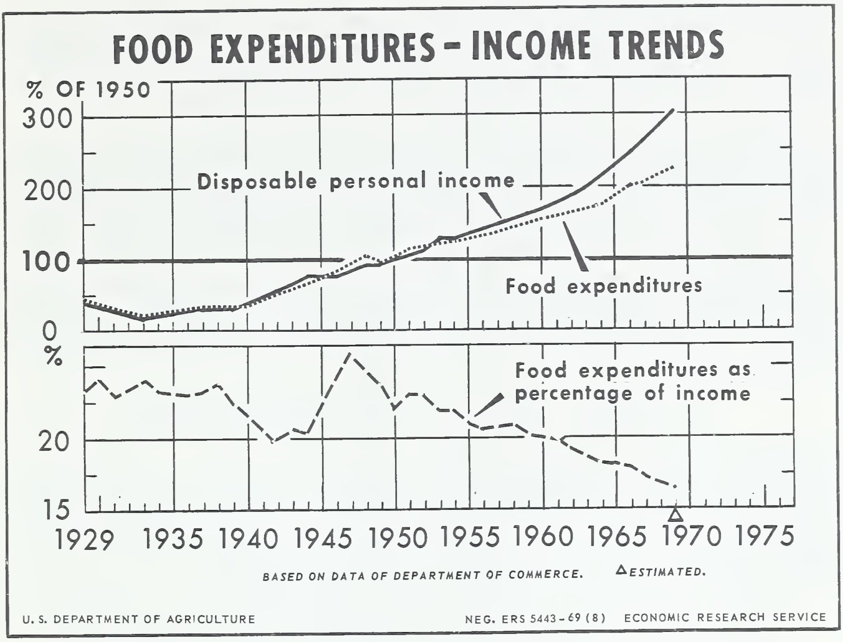
Consumer spending for food totaled about $104 billion in 1969. If U.S. consumers had spent as large a share of their income for food as a decade earlier, their 1969 food bill would have been some 24 billion higher.

Per capita consumption of food in 1969 was changed very little from the pattern of 1968. We ate a little less of eggs, pork, and dairy products, but a little more beef and poultry meat, and considerably more fresh and processed fruits.

The relative stability in overall food supplies at the consumer level in 1969, in the face of continued expanding consumer demand, resulted in an upsurge in retail food prices. Much of the price rise was triggered by a dip in supplies of meat during the second quarter of the year. The increase in food prices was nearly as large as the 5½ percent increase in prices for other consumer items, and, in part, it reflected the same inflationary pressures.

Although food prices rose substantially, the gain in disposable personal income was even greater. Consequently, the percentage of Americans' disposable income spent for food fell, as we have said, to a new low point of 16½ percent.

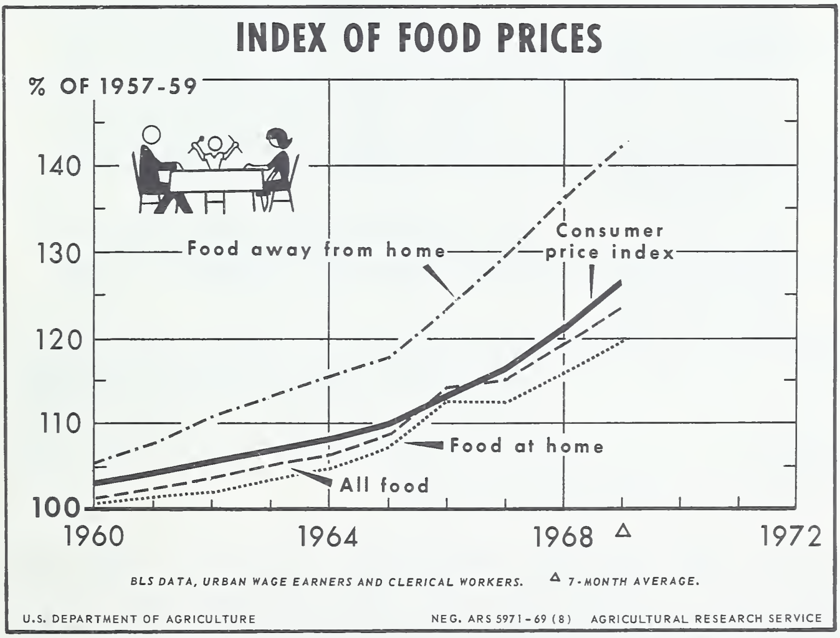
It is important to keep food costs in perspective. Between 1957–59 and December 1969, the price of food purchased for use at



FOOD EXPENDITURES – INCOME TRENDS

BASED ON DATA OF DEPARTMENT OF COMMERCE. *△ESTIMATED.*

U. S. DEPARTMENT OF AGRICULTURE NEG. ERS 5443-69 (8) ECONOMIC RESEARCH SERVICE



INDEX OF FOOD PRICES

BLS DATA, URBAN WAGE EARNERS AND CLERICAL WORKERS. *△ 7-MONTH AVERAGE.*

U.S. DEPARTMENT OF AGRICULTURE NEG. ARS 5971-69 (8) AGRICULTURAL RESEARCH SERVICE home was up 25.8 percent. This compares to a price rise of 26.4 percent for transportation, 48.3 percent for all services, and 58.1 percent for medical care. The overall cost of living in December 1969 had risen 31.3 percent over the 1957–59 average.

Today's U.S. consumer has a strong preference for meat, and especially for beef. A recent national poll asked respondents how they wanted to spend additional income. The desire to have "steaks and roasts whenever we want" ranked immediately behind color TV sets and home airconditioning. The fact is that U.S. agricultural producers have enabled American consumers to improve their standards of eating despite a rise of food costs; this rise, however, was actually smaller than the rise in prices of other consumer items.

THE USDA ROLE IN FOOD EMERGENCIES

When natural disasters strike, food to support mass feeding operations must be available to be rushed into the stricken area almost immediately. USDA personnel keep a close watch on developing storms, flood conditions, and other potential dangers to be ready in the event a need for mass feeding develops.

> When Hurricane Camille struck the Gulf Coast at about 1:00 a.m., August 18, 1969, the need for food assistance soon became critical in several Mississippi counties and Louisiana parishes. Local supplies of USDA foods (an estimated 500,000 pounds) redonated from schools and State warehouses were soon exhausted. USDA's Food and Nutrition Service subsequently shipped some 5 million additional pounds into the disaster area. Foods that could be eaten with little or no preparation—cheese, canned meat, peanut butter, raisins—and infant foods received priority consideration. USDA's fruit and vegetable juices were especially favored because local water supplies were contaminated.
>
> Hurricane Camille also caused floods in West Viriginia and Viriginia as the storm headed northeast. Over 125,000 pounds of USDA food were needed in these stricken areas.

From an entirely different standpoint, the Department must also remain constantly prepared against a national defense emergency.

Our Forest Service maintains approximately 850 fully instrumented monitoring stations and nearly 3,400 trained monitors for radiological defense. Thirty refresher training schools for monitors were conducted during the year.

Forest Service personnel assisted the International Association of Fire Chiefs with their preparation of material on Basic and Advanced Fire Defense Seminars. They also assisted the Office of Civil Defense by reviewing their proposed publications on fire prevention and preparedness to meet emergencies in urban centers.

Our overall responsibility in the event of an all-out emergency is to establish and maintain the capability to manage distribution of food from the farm gate through the wholesale level.

In a national emergency it might be necessary for many millions of people to exist for a time on stocks of food currently available in homes, stores, and wholesale establishments, and on supplies of food located in distribution channels before the wholesale level. It might also be necessary for farmers to adopt emergency measures to protect livestock and feed supplies and to know how to resume production as quickly and effectively as possible.

Through Federal-State agreements, part of the USDA responsibilities are shared with some State governments. The State governments are principally concerned with distribution of food at the retail level and with development of consumer rationing programs or other devices that may be necessary to assure equitable sharing of consumers' food supplies.

Working closely with Federal, State, and local civil defense planners, as well as food industry representatives, our Consumer and Marketing Service revised and refined instructions for implementing a comprehensive Standby Defense Food Order adopted the previous year. Several suborders were developed, along with informational and training materials, to guide Government officials and industry in a national emergency.

A good start has been made toward closing the gaps in national food and nutrition programs.

The concept of family food assistance has shifted from supplementing the family food supply to providing a fully adequate diet. Nutrition education is now a larger part of the total picture.

The administration of food assistance efforts has changed from a passive offering of food to State and local governments to active encouragement and the promise of Federal intervention, if necessary, to make food available to the needy.

The child feeding programs have been enlarged with special emphasis on reaching needy children both in and out of school.

But while a good start has been made, the Nation is still a long way from realization of the commitment "to wipe poverty-related malnutrition and hunger from our land."

CREATING OPPORTUNITY IN RURAL AMERICA

"It is also important to note that the population of our country is likely to grow by 50 percent in the next 30 years. Where these next hundred million persons locate is a tremendously important question for our society."

PRESIDENTIAL PROCLAMATION ESTABLISHING RURAL AFFAIRS COUNCIL

In the space of a lifetime America has changed from a predominately rural society to one that is overwhelmingly urban, largely metropolitan, and threatening to become megalopolitan. Today two-thirds of our people are concentrated in metropolitan areas. The remainder are scattered through the vast geographical expanse which is rural America.

Rural America is home for around a third of our people, but it contains approximately 60 percent of the substandard housing and nearly half of the Nation's poor people. Lack of productive opportunity in rural communities led to these conditions and has been a major cause of the heavy migration out of rural America during the past two decades.

While the national population has grown by 53 million in the past 20 years, the entire growth has been concentrated in urban America.

With a further growth of 100 million possible in the next 30 years, strong positive steps must swiftly be taken to revitalize rural America so that Americans will have a real choice as to where they want to live.

Recognition of this fact led to the appointment of a Presidential Task Force for Rural America, and in November 1969 to the establishment of Rural Affairs Council within the Cabinet.

In announcing the Rural Affairs Council, the Presidential proclamation stated:

> After an era in which people have moved steadily from the countryside to large and crowded cities, we must now do what we can to encourage a more even distribution of our population throughout our country. The Rural Affairs Council can help our Nation to meet this challenge by helping rural America, once again, become an area of opportunity.

Improving Outreach Into Rural Areas

Although many Federal, State, and local programs are available to assist rural people, and have been for years, these services have not been adequately used. With the Rural Affairs Council providing direction in bringing the resources and services of the Federal establishment to bear on problems of rural development, communication between assisting agencies and the people and coordination among Federal, State, and local agencies can be improved.

Within the Department, we have directed every agency to provide aggressive leadership in its area, assigning appropriate resources and personnel to the rural development effort. We have greatly expanded the responsibilities of the Extension Service for leadership and education in rural development.

To coordinate these activities we established a Departmental Rural Development Committee to develop the vital policies, programs, and priorities necessary for the Department to carry out its rural development mandate. The membership of the Committee includes administrators and deputies of the Farmers Home Administration, the Forest Service, the Soil Conservation Service, the Rural Electrification Administration, and the Extension Service.

Each member agency has specific liaison responsibilities with other Federal agencies. For example, the FHA assigns key men to coordinate with the Department of Housing and Urban Development. USDA also maintains liaison with national organizations to help make their programs and services more readily available to rural people and their communities.

Another key element of our rural development organization is the USDA committee for rural development in each State. Each committee, convened by the Director of that State's Cooperative Extension Service, elects its own officers and develops its own operating procedure. Members include representatives of the Forest Service, the Farmers Home Administration, the Rural Electrification Administration, and the State Cooperative Extension Service.

These committees will decide what kind of USDA rural development organization should be established on a local basis and will work closely with State and local people in support of comprehensive planning and development.

Extension Given Larger Responsibilities

As was intimated above, Cooperative Extension was given expanded responsibilities in the Rural Development Program. This new role includes: Stimulating and assisting leaders at all levels to apply the community development process; assisting communities to make use of resources available from Federal, State, and local governments, and private organizations; assisting in maintaining effective USDA rural development committees at State and local levels as needed; increasing use of land-grant university resources in solving community problems; training Extension and other USDA personnel to meet the most urgent needs; conducting innovative rural development projects; and participating in projects funded through other agencies.

Cooperative Extension continued its emphasis on education and information for rural development groups throughout the year. More than 17,500 county and area leaders and 265,000 leaders in special interest projects and programs relating to rural development benefitted from the program.

The educational efforts were aimed primarily at better use of Federal, State, and local resources in:

1. Improving incomes and expanding job opportunities.
2. Improving citizen participation in community decisions.
3. Improving community facilities and services.

BETTER FARMING

An important part of the Nation's rural development effort consists of programs aimed at improving the economic position of American farms and farm families.

Supervised Credit an Effective Tool

Supervised credit provided by USDA's Farmers Home Administration helps thousands of low-income, underemployed farmers who are unable to borrow from commercial sources.

FHA advanced $275.7 million to 12,770 farm family operators during calendar 1969 to help them buy, develop, or enlarge their farms.

Farmers 35 years old or younger, the group that encounters the most difficulty in finding available credit resources to establish themselves in agriculture, received about 45 percent of this credit.

FHA also advanced $269.8 million in operating credit to 48,850 small farm operators.

A total of $86.6 million was provided in short-term emergency loans to 14,780 distressed farm operators who were hit by floods, hurricanes, drought, and other disasters.

Credit amounting to $12 million was advanced to 92 nonprofit grazing associations. This enabled 1,200 small ranchers and farmers to acquire needed additional land resources for their livestock operations.

More than $7.3 million was advanced to over 1,100 farmers to help finance improvements in soil and water resources or to develop income-producing recreation enterprises on their farms.

Role of Extension

While the Extension Service works with all farmers, special emphasis is being given to improving the economic position of low-income farmers. Some projects involve working intensively with small groups of selected farmers. Other projects help limited-resource families develop their enterprises into demonstration farms. Extension conducts tours and field days at these units so that neighboring farmers can see the results of improved practices.

One specific project which is increasingly popular with low-income farmers is vegetable growing. Requiring much hand labor but little land and capital, it yields high returns per acre and brings a cash income in the summer months before the major crop harvests.

> Growing trellised tomatoes, which returns up to $3 per hour for the labor required, is expanding in a belt from North Carolina through Arkansas to Louisiana.

HELPING PEOPLE WORK TOGETHER

In addition to the 92 nonprofit grazing associations to which FHA provided credit during calendar 1969, the agency advanced more than $2,450,000 to 85 rural marketing, supply, or processing cooperatives serving low-income rural people.

Aided by USDA financing and technical assistance, 400 low-income Kentucky farmers went into a cooperative fruit and vegetable enterprise. In 1969 they produced and marketed cooperatively half a million dollars worth of products. This was additional gross income from an enterprise which had not previously existed.

Some co-ops are enabling subsistence farmers to transfer out of agriculture into other rural occupations.

> The Farmer Cooperative Service helped 300 low-income West Viriginia families, most of them part-time farmers, organize a handicraft marketing co-op that increased the average members' income by $400 during the first 3 months. On becoming fully operative in fiscal 1970, the co-op will serve 600 families and increase their average incomes by $2,000 a year.

During Co-op Month 1969, in order to highlight the growth of the emerging craft industries in rural areas, an exhibit of handcrafted items from 32 States was displayed in the USDA administration building in Washington. One crafts cooperative in the Appalachian region reported that it had recently stopped taking orders when its backlog of unfilled accounts reached a value of $100,000.

The Forest Service is also active in cooperative endeavor. Aided by USDA's Forest Service and representatives of State and private forests, 52 owners of small woodland tracts in the State of Washington incorporated as the Forest Management and Sales Association of Chehalis, Wash.

The Weyerhaueser Company, with extensive holdings in the area, became interested in the new co-op's ability to furnish a steady supply of sawlogs, poles, pulpwood, and other wood products. Under a trial agreement with the co-op, Weyerhaueser will provide professional forestry services to improve woodland management and production, and will offer an assured market for the association's alder, other hardwoods, hemlock, Douglas-fir, spruce, and even Christmas trees.

CREATING NEW JOBS

One of the big economic challenges facing rural America is that of developing satisfactory job opportunities. In counties where the population drain has been stopped, the major single reason appears to be a growth of nonfarm employment to the point where it more than offsets the decline in farm jobs.

The trend toward multicounty development districts is one new and effective force in implementing community development programs. An example of this is the Barren River Development District in Kentucky. It represents a merger of two smaller development districts, one centered around Bowling Green, the other around Glasgow. USDA personnel took the lead in persuading local district officials, county judges, and mayors of the advantages of such a merger. The Department continues to advise on methods and procedures.

> The Chrysler Corporation and the Firestone Company have made commitments that will lead to 1,200 new jobs in the Bowling Green area as a result of the merger. Several smaller companies have made commitments that promise more than 500 new jobs in the Glasgow area. The desirability of the merger was influenced by the need for a larger economic base on which to finance the capital improvements necessary to provide services for a rapidly growing population.

Resource Conservation and Development Projects

Significant economic progress is being made in terms of employment and additional gross income generated in resource conservation and development areas. Forty-two areas were operational at the end of the fiscal year and 54 at the end of the calendar year. Measures completed at the end of fiscal 1969 had provided more than 16,000 man-years of employment during installation. More than 16,000 additional man-years of continuing annual employment is expected to result in $165 million extra annual income.

Seventy-eight thousand man-years of continuing employment and about $700 million of gross income are represented by all activated measures. Similar increases in employment and income are projected for measures being installed and those in which planning is underway.

Watershed Protection and Flood Prevention Projects

Watershed protection and flood prevention projects not only protect and develop the water and related land resources in upstream watersheds; they also significantly enhance the economic development of surrounding areas.

More than half of the operating watershed projects are located in areas where low income prevails. By the end of fiscal 1969, construction and industrial expansion generated by small watershed projects had created an estimated 50,700 jobs and added about $152 million to payrolls of previously unemployed or underemployed people.

Economic Opportunity Loans

Low-income rural Americans often look to some form of self-employment to raise their standard of living. In most cases, credit is needed to set up tools, supplies, and a place to work.

FHA is authorized under the Economic Opportunity Act to make a limited number of loans for these purposes. In calendar 1969, FHA made EO loans totaling $5,335,563 to 3,363 low-income rural families to help them improve their farm operations or finance the establishment of small business or service enterprises.

The occupations taken up by EO borrowers range through more than 550 different kinds of small enterprises, including mechanical and electrical repair, sewing, carpentry, plumbing, woodworking, tree cutting, lawn mowing, painting, shellfishing, cleaning and pressing, recreation services, bus lines for industrial workers, handcrafts and native arts, shoe repair, food specialties, and small general stores in remote rural communities.

> A study of loans in three southern States shows that borrowers increased their income by $200 in the year following the loan. A further average increase of $400 was expected the second year, as the enterprises became more fully developed. The average loan was $1,718 and three out of five borrowers indicated a desire for an additional EO loan with which to expand their businesses.
>
> Prior to the loans, four out of five borrowers were in the deprived or seriously deprived income classifications. One out of four had prior incomes under $1,000. One-fourth of the borrowers were at least 60 years old and less than one-half had completed as much as 8 years of schooling.

Developing New Skills

USDA agencies continued to provide opportunities for disadvantaged persons, especially the young, to raise their employment, educational, and economic capabilities.

A well-structured job-skill training program is carried on in the 20 civilian conservation centers operated by the Forest Service. Through cooperation with several labor unions, the number of specialized training opportunities was increased. Some 4,200 young men from these centers were enabled to get jobs, return to school, enter military service, or enroll in advanced training programs. Besides these benefits, the conservation work associated with the program enhanced the value of National Forest lands by more than $11 million.

Approximately 7,000 youth, ages 16 through 21, had summer jobs in the National Forests. About 900 youth were employed through the President's Summer Aid Program.

IMPROVING RURAL LIVING CONDITIONS

Various studies indicate that some 35,000 rural communities still lack central water supply systems and about 45,000 rural communities are without central waste disposal systems. Few rural communities have adequate recreation areas. Lack of these basic facilities makes many rural communities undesirable as places to live.

Rural Community Improvement

In calendar 1969, the Farmers Home Administration advanced $155.8 million in loans and $21.3 million grants to 895 rural communities to develop water and sewer facilities. When completed these services will benefit 228,000 rural families or about a million persons.

In addition, FHA provided $3.1 million in grants to 193 counties or multicounty districts for comprehensive planning purposes. These funds are used so that larger rural areas can develop water and waste disposal systems on a more orderly and more efficient basis with long-time community development in view.

About $12.9 million in loan funds was advanced to 140 nonprofit community organizations to develop large-scale outdoor recreation facilities. More than 27,600 rural families will benefit from these facilities.

Improving Rural Housing

Some 4 million substandard homes in rural America are in need of replacement or major repair.

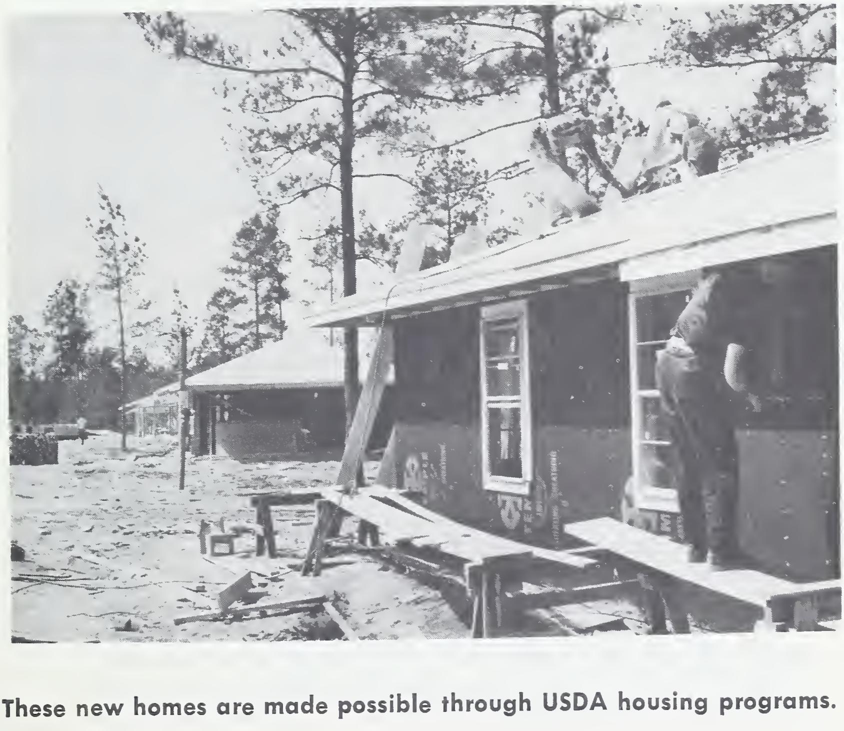
Rural housing credit advanced through the Farmers Home Administration totaled $559.4 million in calendar 1969. This augmented credit available from conventional lending institutions and other agencies. It enabled almost 58,300 individual rural families to build, remodel, or repair their homes. The total funds advanced included $6 million to 768 very low-income families for self-help housing—projects in which much of the construction is done by the families themselves working under skilled supervisors.

In addition, FHA advanced $21.5 million to develop 433 rural rental housing projects for elderly citizens and low-income families, plus loans and grants totaling $7 million to provide 25 low-rent housing projects for domestic farm labor.

The following example illustrates the need for and the benefits of the rural housing program.

> During the fiscal year the J family of 9 persons moved into a new modern home in the Negro community of Triana, Ala. The new home was financed through an FHA insured loan for $8,970. The contrast between the J family's new accommodations and the dilapidated shack in which they had lived for years is almost incredible. The total annual payments, including taxes and insurance, amount to $320, somewhat less than the rent they had been paying. Although Mr. J is a general laborer whose income has hovered around $3,000 a year, he should be able to sustain the payments. This extremely low payment is made possible by a housing program under which the FHA will carry the balance of the cost, amounting to $249 a year.

Improved housing is urgently needed in rural America.



These new homes are made possible through USDA housing programs.

Electricity

A total of 252,275 rural consumers and subscribers will receive electricity or dial telephones as the result of loans made by the Rural Electrification Administration during calendar 1969. The total number of persons served by REA-financed rural electric and telephone systems is estimated at more than 25 million.

REA approved 316 electric loans amounting to $329.3 million, bringing cumulative loans in the electric program, since it began in 1935, to nearly $7 billion. The year's loans will finance service for 153,332 consumers.

REA's 1,001 electric borrowers provide power over 1.7 million miles of line to 6.1 million rural units in 46 States, Puerto Rico, and the Virgin Islands.

Telephones

With the accelerated drive for recreational, commercial, and industrial development in rural areas, improved telephone service has new significance. The eight-party service of years back is no longer adequate to meet today's subscriber demands. Over one-fourth of the subscribers on REA-financed telephone systems now have one-party service. The goal is to reach 52 percent by 1975.

During 1969, REA approved 166 telephone loans totaling almost $119 million to finance new or improved service for 98,943 subscribers.

In the 20-year history of the program, REA has financed 871 rural systems—636 commercial companies and 235 cooperatives—with loans totaling more than $1.6 billion to finance new or improved all-dial telephone service for more than 2.3 million farm and other rural subscribers.

Four out of five farms now have telephones, compared with only one in three when the program started, and 99 percent of today's service is dial.

Area Coverage

By extending service on an area coverage basis, electric and telephone borrowers continued to contribute to improved living and working conditions for rural people.

> The Petit Jean Electric Cooperative Corporation, with headquarters in Clinton, Ark., received an REA loan to extend first-time electric service to 52 consumers in the small community of Ben Hur. This rural community is located in Newton County, in northwestern Arkansas, within the Ozark National Forest. The loan is being used to finance installation of 26 miles of distribution line across very rugged terrain which characterizes part of the borrower's service area. Dynamiting has been required for digging holes for electric poles in this rocky area. Helicopters have been used for setting up poles and stringing line across wide ravines.

In many rural areas the availability of electricity and telephone services is attracting industrial and commercial enterprises, as well as new residents. Industrial and commercial loans on REA-financed lines are increasing at the rate of about 10,000 a year.

DEEPER INSIGHTS NEEDED

To achieve a true climate of opportunity in rural America and give the citizen of tomorrow a real choice between a good life in the city and a good life in the countryside, deeper insights into the problems of rural America are needed.

Population migration is not necessarily undesirable. Geographic mobility is necessary to social and economic progress. However, migration sometimes causes problems in the sending areas, in the receiving areas, or in both.

About 1,100 counties in two major areas declined in population in the 1960's. One area in the East includes the Appalachian Region and many counties in the Southern Coastal Plain where there is insufficient industry to absorb continued surpluses of agricultural labor.

But this area is small compared with the great triangle extending from eastern Texas northeastward to the Upper Peninsula of Michigan, west along the Canadian border to central Washington, and then southeastward to Texas again. Here the mass of the rural population is work-orientated, reasonably well educated and housed, and free of the disadvantages of ethnic or cultural minority status. The population losses in this huge area are generally understandable, in view of the continental climate, the increasingly extensive nature of much of the agriculture, the lack of timber resources, the dearth of sizable population centers and markets, and the lack of navigable water. These declines typically occurred in communities that were already affected by past outmigration, and where local population bases and governmental units had already shrunk.

Massive Two-Pronged Attack Needed

It is obvious that the problems of rural depopulation, rural poverty, and urban ghettos cannot be solved by attempting to freeze population distributions into their present patterns. They can only be solved by a massive two-pronged attack:

> Effective ways must be found to improve materially the economic and social attractiveness of at least the more fortunately endowed rural areas. People of superior economic productivity must discover in rural and semirural areas positive advantages as places to live and work. This includes a more balanced geographic distribution of employment and other economic opportunities than is presently the case.
>
> The second prong must be the effective upgrading of the educational levels and working skills of most of the labor force, including low-income people—both rural and

> urban. Lacking this, many of the more desirable economic opportunities will go begging for qualified people, as indeed many do today.

If such an attack can be successfully mounted, population migration could revert to normal adjustments in response to the changing relative economic opportunities offered by various geographic areas. Population migration probably will continue to require some adjustments in areas where competitive position lags. But, given adequate and accurate sources of information on relative economic opportunities, the shifts could generally be expected to benefit both the migrants and the receiving areas.

A sound policy of national growth does not mean telling people where they should live. It simply aims at giving the Americans of tomorrow a reasonable choice of where they want to live.

Beyond the boundaries of metropolitan America lies a fertile land of beautiful landscape, open space, rich resources and an energetic, proud people.

This rural and small town America can offer opportunity and hope for a better life for all of us and our children's children, for those who prefer to live in the country, and for those who prefer the city.

RESOURCE MANAGEMENT AND CONSERVATION

> *"The big thing in conservation is wise use of the things we possess. Merely to survive, we must use our national resources. We must eat, we must clothe and house ourselves. If in so doing we ruin our soil, pollute our waters, defile our air, lay waste our forests, we are bad conservationists, and the ultimate penalty for bad conservation will be, first lives scarcely worth living, and finally, extinction."*
>
> Melville Bell Grosvenor

Today a majority of Americans, urban and rural alike, in all sections of the country, live near polluted waters and breathe polluted air.

The statement on the creation of the Environmental Quality Council says, "Each day we receive new evidence of the declining quality of the American environment . . . . The deterioration of the environment is in large measure the result of our inability to keep pace with progress. We have become victims of our own technological genius."

Undeniably, environmental problems have been, and are, growing. Yet there are in being valuable and effective programs of resource and environmental improvement.

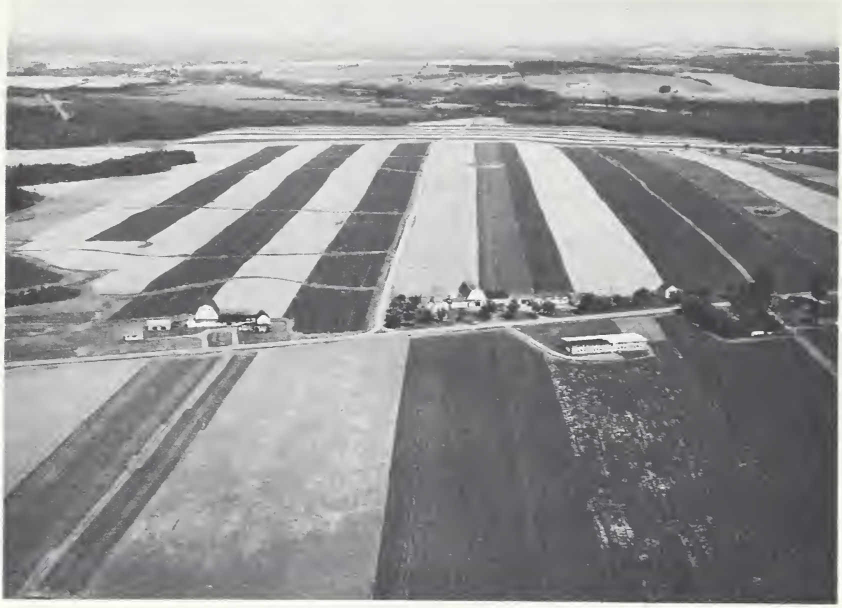
CONSERVING OUR LAND

In response to requests from planning officials and community leaders the Soil Conservation Service provided planning and onsite technical services to 18,191 governmental units or planning organizations during the fiscal year. These services included special soil survey reports, interpretations and descriptions; water inventories; watershed data; conservation needs inventories; and information on conservation practices needed or applied.

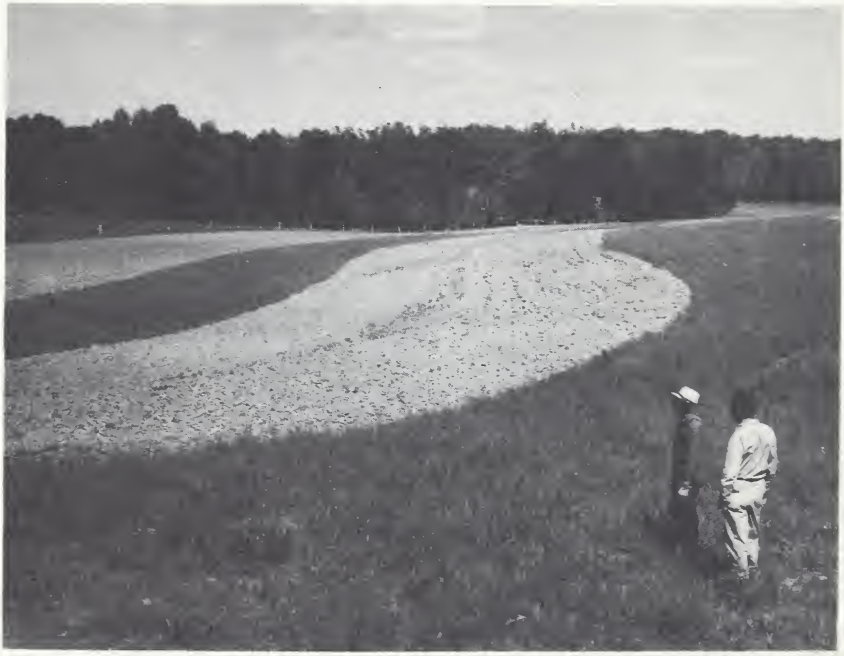
The results of this information and counsel showed up in hundreds of community-wide, county, or regional resource land-use plans adopted by governing bodies; in numerous land-use regulations, land treatment control requirements, zoning ordinances, sanitary codes, building codes or standards; and in investigations and recommendations on proposed sites for schools, hospitals, sanitary land fills, recreation areas, and sewer and water facilities.

USDA conservationists and other specialists in land and water use also provided technical services to 1,180,703 individual landowners and users in planning or carrying out conservation measures, mainly through the soil and water conservation districts.

More than 700,000 cooperators established conservation practices during the year, adding approximately 47 million acres to the land being adequately treated for its conservation needs. At the end of the fiscal year, 515 million acres, or about 28 percent of the land in conservation districts, was adequately treated according to conservation plans.



Stripcropping in Maine.



And in Tennessee.

Cropland Conservation

Rapid changes in farming methods are bringing about equally great changes in conservation concepts and methods. The high horsepower tractor with six, eight, or 12 row equipment, the combine with a six or eight row corn header, and the multirow mechanical cottonpicker are now commonplace.

The Soil Conservation Service gave added emphasis in 1969 to installing parallel terrace systems for erosion control on cropland. With parallel terraces, it is easier to farm with big equipment. Of all terraces constructed during fiscal 1969, 27 percent was parallel terracing, compared with 23 percent the year before.

Farmers made notable progress in the improved management of crop residues, especially through minimum tillage practices. Such practices not only reduce runoff and erosion, thereby diminishing the amount of sediment in streams and dust in the air; they also reduce labor and machinery costs of crop production.

Soil Surveys

Soil surveys and soil maps are used not only by farmers but also by urban planners and developers, engineers, and others to avoid the costly mistakes that can result from construction on soils having severe limitations for houses, schools, factories, roads, and other purposes.

> Detailed soil surveys were completed on 45.0 million acres and reconnaissance surveys on 3.8 million acres during the year. Modern soil surveys suitable for operational planning have now been completed for about one-third of the U.S. land needing them.

A start has been made on a new soil map of the United States at the scale of 1 to 1,000,000 which will be especially useful for planners concerned with multicounty and regional land use and resource problems.

A soil map showing distribution of major kinds of soil in the world was drafted for publication at a scale of about 1 to 50,000,000.

Conservation Needs Inventory

Updating of the National Inventory of Soil and Water Conservation Needs was vitually completed in 1969. One State report was published and all are expected to be available in calendar year 1970. A national statistical report is also being prepared.

Great Plains Conservation Program

The Great Plains Conservation Program helps to stabilize soil resources and the local economy of the Plains States.

During fiscal 1969, 3,484 new long-term cost-sharing contracts were signed, placing an additional 5.8 million acres under comprehensive planned conservation treatment. As of June 30, 1969, more than 34,000 farm and ranch operators were in the program, providing conservation for 62 million acres.

> Wind erosion damage in the plains in the winter and spring of 1969 was the lowest recorded in 35 years of reports maintained by the Great Plains Agricultural Council and the Soil Conservation Service. A total of 995,150 acres was damaged in the 1969 "blow season," a decrease of more than 15 percent from the year before. In the drought years of the 1950's the acreage damaged by wind in a single season reached as high as 15.8 million acres. The decline is attributed in part to the increased use of soil and water conservation practices by Great Plains landowners.

Resource Conservation and Development Projects

These projects, which were mentioned in the rural development section of this report, coordinate conservation with economic development.

Usually multicounty in scope, RC&D projects are sponsored by subdivisions of the State government, endorsed and supported by local groups and organizations, and approved by the Governor. Based on a thorough inventory of natural resource potentials, they deal with a broad spectrum of opportunities and problems in agriculture, forestry, industry, employment, and community facilities to make the project areas better places to live and work.

Projects were provided technical assistance, loans, and other financial help in fiscal 1969 for more than 5,000 measures with tangible community benefits. Other Federal departments, State agencies, and local groups are giving significant assistance in furthering project objectives.

Agricultural Conservation Programs

The Agriculture Conservation Program (ACP)—in which the Government shares the actual expenses of applying soil, water, woodland, and wildlife conserving measures—continued to stress treatment of conservation problems on low-income family type farms. It also emphasized getting a conservation program started on farms where none had been undertaken.

About a million farmers and ranchers took part in the ACP during the year.

Long-term acreage diversion programs from specified crops to public benefit conservation uses were carried out in 1969 under the Conservation Reserve (Soil Bank) Program, the Cropland Conversion Program, and the Cropland Adjustment Program. During fiscal 1969, 7.7 million acres of land formerly producing crops, mostly in overabundant supply, were under agreements. Agreements on 4.3 million acres were still in effect at the end of the fiscal year.

WATERSHED PROTECTION AND FLOOD PREVENTION

According to estimates from each of the 50 States, the flood and sediment damages prevented during fiscal 1969 by structural measures installed in the 50 pilot watersheds and the 686 Public Law 566 projects amounted to about $40 million.

Since the beginning of the watershed protection and flood prevention program in upstream rural areas in 1954, projects carried out under the program have prevented an estimated $142 million in property damages. Severe erosion has been curbed on 1.4 million acres, and 11.5 million tons of sediment have been held out of streams and off bottom lands.

Thirty-three watershed protection and flood prevention projects were completed during fiscal 1969, almost one in seven of the projects completed during the 15-year life of the program. Initial agreements for construction were signed for 54 projects in 33 States.

These are cooperative ventures between the Federal Government and the local people. Local people acquire the land rights, administer the contracts, and share the costs of many of the protection measures installed. Federal assistance includes technical help in preparing designs and surveys and technical and financial assistance in planning and installing the various land treatment measures.

Local sponsors submitted 129 new applications for assistance under Public Law 83–566 during fiscal 1969. Planning assistance was authorized for 100 projects, and a total of 103 projects were approved for operation.

> The multiple-purpose concept is strongly reflected in these projects. Of the 103 plans approved for operation during the year, 66 include more than one purpose. In addition to watershed protection and flood prevention, 30 project plans include public recreation and 14 provide for water supply storage. Measures for agricultural drainage are planned for 21 watersheds, improved irrigation facilities for 16, and fish and wildlife habitat improvements for five projects.

River Basin Surveys

During the fiscal year the Department carried on water and land resource investigations in 59 river basins. Twenty-four of these are comprehensive interagency studies being coordinated by the Water Resources Council established under the Water Resources Planning Act of 1965. Most of the other studies are carried on in cooperation with State water resource agencies to identify opportunities for water and related land resource development in upstream areas and developments which should be initiated in the near future to benefit rural and urban residents. Among the studies completed is the Water Resources Survey for the Appalachian Region.

PROTECTING OUR FORESTS

The National Forest System comprises 187 million acres. Managed under the principles of multiple-use and sustained yield, these lands are administered for their five basic resources: Timber, water, outdoor recreation, forage, and wildlife.

Timber Sales

About one-fourth of all timber harvested in the United States comes from the National Forests—11.8 billion board feet in fiscal year 1969. The timber cutting is carried out by private companies under contract with the Forest Service, and is closely supervised by Forest Service personnel.

Receipts from the sale of National Forest timber are turned over to the U.S. Treasury, with one-fourth of the total returned directly to the States and allocated for schools and roads in the counties where the National Forests are located. Receipts from National Forest timber sales and other land uses during fiscal year 1969 reached a record $321.3 million, an increase of $102 million over the previous year.

Reforestation

To replace timber harvested, 256,545 acres of National Forest lands were planted and seeded to trees. On State and private forest lands, over 1.1 million acres were reforested under the Cooperative Forest Tree Seedlings Production Procurement and Distribution Program. On all lands throughout the Nation—Federal, State, and privately or forest industry owned—1.5 million acres were planted and seeded to trees during the year.

Fire Control

During the year, drought and high temperatures combined to create extreme fire danger in the western part of the Nation. In some forest areas the hazard was even higher than during the damaging 1967 fire season. Yet, the burned acreage in the National Forests during 1969 was less than half of the previous 5-year average. Among the major reasons for this impressive record were careful advance planning and aggressive attack by the fire control forces.

Through the Cooperative Forest Fire Control Program, we continued the steady increase and improvement in organized protection of non-Federal forests. Some 480 million acres of the 517 million acres needing organized protection are now under the program.

Water and the Forests

The 1969 fiscal year saw the completion of an important milestone in the Watershed Restoration Program. In Alabama and South Carolina, all major gullies on National Forest System lands have now received an initial treatment. This is the result of a

Family camping in the Sierra National Forest.

Winter sports in Inyo National Forest.

30-year effort to install small soil-saving dams, and to plant trees, shrubs, or other plant species that provide quick ground cover.

The Forest Service continued to observe conditions and collect samples of raw water for analysis to determine the effect that National Forest management is having on water resources. This surveillance makes it possible to detect significant changes, determine the source, and apply remedial action in the shortest possible time.

A computer program was developed in the Pacific Northwest Region to assist in storing and retrieving the data.

> The reconnaissance hydrologic survey and analysis to determine overall potentials for increasing water production and for decreasing sediment yields from National Forest System lands in the Pacific Southwest through programs of vegetation manipulation was completed. The survey, which covered 44.7 million acres on 44 National Forests located in Arizona, California, Colorado, New Mexico, Nevada, Utah, and Wyoming, included most of the important water producing lands in the Southwest.

Recreation

Recreation use of the National Forests continued its upward trend. Year after year, visitors come in record-breaking numbers to camp, drive, hunt, fish, picnic, ski, swim, canoe, hike, and take pictures.

In 1969 more than 163 million visitor-days of use on all recreation sites was reported.

To accommodate the increasing demand, 331 new camp and picnic grounds—many of them major sites—were developed. Existing camp and picnic areas can now accommodate 514,471 persons at one time. Other facilities, such as boating and swimming sites and winter sports areas, also underwent intensive development. Sites and special facilities developed by the Forest Service can now safely accommodate almost 1.2 million persons at one time.

Wilderness

Six new National Forest areas were added to the National Wilderness Preservation System—the San Rafael, San Gabriel, Desolation Valley, and Ventana areas in California; Mt. Jefferson in Oregon; and Pasayten in Washington. These additions brought the total National Forest areas in the Wilderness System to 9,940,219 acres. Virtually the entire National Wilderness System consists of Forest Service lands.

Another 4.5 million acres in 30 primitive areas are being reviewed under provisions of the Wilderness Act of 1964 to determine their suitability for inclusion in the Wilderness System.

Fish and Wildlife Management

The National Forests offer superb big-game hunting and sport fishing opportunities under State fish and game regulations. To enhance these opportunities, habitat management plans are prepared for each administrative unit and for major wildlife species. These plans identify habitat requirements for each species concerned.

Wildlife use is growing annually at a rate of 5 percent for fishing, 8 percent for hunting, and 5 percent for nonconsumptive uses.

Engineering

During the year, emphasis was placed on the responsibility for improving the quality of the natural environment in all projects requiring engineering services. Criteria and a statement of objectives were issued for highways, forest development roads and trails and associated structures, ski lifts, administrative buildings, transmission facilities, reservoirs, and other structures and improvements.

> During the year, 1,028 miles of roads, 447 miles of trails, and 166 bridges were constructed or reconstructed from regular forest road and trail funds. In addition, purchasers of Government timber under the terms of timber sale contracts constructed or improved 7,577 miles of road and provided maintenance on 29,126 miles.

At year-end, lands administered by the Forest Service were served by a transportation system which included 199,042 miles of forest development roads, 100,257 miles of trails, and 451 landing fields for fixed-wing aircraft.

ANTIPOLLUTION MEASURES

There is great concern about the purity of the American environment, particularly as it relates to human safety. The need is urgent not only to keep from further damaging our land, water, and air, but to repair the ravages of the past.

In June 1969, all heads of USDA agencies were instructed to lead a nationwide effort to improve water quality through prevention of pollution from Federal activities.

Increasing emphasis is being given to finding ways to prevent water contamination by animal wastes.

> An example of this effort is the "Guide on Swine Housing and Waste Management" prepared under the Swine Industry Development Program conducted by Extension in cooperation with industry organizations and producers. Similar guides are being prepared for the beef and sheep industry development programs.

Through a series of seminars, Extension workers in virtually all States have had access to training on disposal of animal wastes. The emphasis is on possibilities to convert wastes to economic uses rather than letting them become economic liabilities.

Safer Pest Controls

The USDA is deeply committed to the development and use of safer, more effective pest control measures. These activities involve pest control campaigns, regulation of pesticides, monitoring of pesticide residues, research on safer pesticides and on biological and other alternative methods of pest control and education and information on the use of chemicals.

Human as well as pet and livestock health is protected by USDA controls over veterinary biologics. These products are used in diagnosing and preventing animal diseases, including ailments transmissible to man. During calendar year 1969, 11,865 serials, or 9.5 billion doses, of veterinary biologics were produced in the United States. Sixty percent of these serials were inspected for safety, purity, or potency, and 108 million doses were rejected as substandard.

To ensure safety and effectiveness, pesticides sold across State lines are registered with the Department. During the year, 2,068 new pesticide products were registered. Registrations of another 5,771 products were amended. More than 45,000 products are registered and assumed to be on the market.

Because pesticides are only as safe as their users are careful, USDA carries on an extensive education campaign. Information packets on pests and their control were distributed by the hundreds of thousands to scientists, biology teachers, and students. Training conferences, schools, and workshops were held on the safe use of pesticides. Outstanding authorities cooperated in conducting these training exercises.[5]

Reducing Pesticide Use

Prompted by growing evidence of environmental contamination, the Department acted to reduce the amount of DDT and other persistent pesticides applied by public and private users.

> In July 1969 all Department pest control operations involving the use of nine persistent pesticides were suspended pending a review. Subsequently, the use of dieldrin, heptachlor, and DDT was either eliminated or drastically reduced in these programs.
>
> In November, we announced that Federal DDT registrations amounting to 35 percent of the total use of DDT nationally—including home and garden uses—were being cancelled, and that all other nonessential uses of this pesticide would be prohibited by December 31, 1970.

Meanwhile, efforts continued both to find ways of applying pesticides safely and to counteract contamination where it has occurred.

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[5] In January 1970, the Departments of Agriculture, Interior, and Health, Education, and Welfare announced a new interagency agreement designed to strengthen the Federal Government's capability in the review and registration of pesticides.

A new system for handling pesticides in ultra low-volume sprays has been successfully field-tested by ARS engineers. This system greatly reduces chances of contamination by dirt or trash, as well as the possibility of accidental human contact with the spray mixture.

Under Food and Drug Administration regulations, traces of dieldrin in milk make it unsuitable for market. Farmers whose cows have been accidentally contaminated by feed treated with aldrin have formerly had to wait a year or more for the cows to rid themselves of contamination.

Experiment station scientists in Michigan found that feeding charcoal pellets and phenobarbital to cows accelerates the decontamination process so that milk can be marketed within 40 days.

Biological Controls

The Department intensified its efforts to replace some of the chemical pesticides now in use with other less hazardous means of pest control. Male sterilization is among the new methods for insect control.

> By releasing 1 million sexually sterile male codling moths into the natural population, USDA entomologists succeeded in virtually eradicating this pest from a 93-acre apple orchard. Codling moths are the cause of "wormy" apples.

Early tests indicate that insects which parasitize cotton pests may help to reduce insecticide requirements. One insect is a fly that parasitizes bollworms; another is a wasp that parasitizes bollworms and budworms but does not harm humans or other forms of life.

> Live male boll weevils have been used successfully to attract other weevils into traps where they become entangled in a sticky coating and die. These traps should assist in the detection, survey, and control of weevil populations.

A coordinated program has been initiated by 10 States and the USDA to concentrate research efforts on controlling internal parasites of livestock by biological rather than chemical methods.

The first flight response of a bark beetle to a synthetic sex attractant was reported by a team of scientists from the Forest Service, University of California, and Stanford Research Institute. Synthetic production of bark beetle attractants will facilitate large-scale use of these materials for detection and evaluation of bark beetle populations in surveys and, perhaps, for mass trapping as a control measure.

Herbicides

By far the fastest growing use of pesticides is in the area of weed control. Herbicide persistence is a serious problem for growers of horticultural crops.

Tests indicate that substituting kerosene for water as a herbicide carrier can cut herbicide persistence from 5 weeks to about 2 weeks.

Insect trappers checking traps along the edge of a cottonfield.

Here a parasitic wasp is laying its eggs in a cabbage-worm larva.

The search for a biological weedkiller has led to the discovery of rhizobitoxine, a substance made by certain strains of a bacterium. Rhizobitoxine is toxic to plants through a mechanism which does not exist in animals.

An ARS study shows that eight different herbicides—diuron, simazine, terbacil, dalapon, paraquat, amitrole, diphenamid, and dichlobenil—can be used in orchards for season after season without injuring trees or reducing fruit quality.

While Government can lead and can focus the Nation's attention on resource conservation and environmental improvement, the effectiveness of our national efforts will be decided by what is done by the citizens of the United States, both individually and collectively through Government, industry, and public and private organizations at all levels. The people will ultimately determine how successfully the Nation carries on the great conservation endeavor started around the turn of the century by such leaders as Gifford Pinchot and Theodore Roosevelt.

Much of the technology required to meet prospective conservation and environmental needs is already in being. What remains to be developed is a reinforced national will to apply this technology to our environmental problems.

To quote again from the statement on the Environmental Quality Council: "Together we have damaged the environment and together we can improve it. . . . We need a high standard of living, but we also need a high quality of life. . . ."

THE ROLE OF RESEARCH

> *"The advent of modern science is the most important social event in history."*
>
> Earl T. Compton

Our growing population and the requirements of rising standards of living pose a substantial challenge to the agriculture of tomorrow.

During 1969, consequently, American farmers continued to look to research to provide greater efficiency in production; to develop treatments that will maintain quality and improved storage and transport facilities that will get farm products to market more efficiently; to develop new agricultural products and new uses for products already established; to find better ways to use and improve soil, water, and timber resources; to control or eradicate pests and diseases; and to develop the science of nutrition to help win the war on hunger both at home and abroad.

As the foregoing pages of this report indicate, research carried on by the Agricultural Research Service, the Forest Service, Extension Service, Soil Conservation Service, Economic Research Service, and other USDA agencies undergirds most of the Department's programs and services.

In the pages which follow we look at the broad scope of USDA research, much of it carried out in close cooperation with the land-grant institutions and the State agricultural experiment stations.

RESEARCH: TOOL OF EFFICIENCY

In line with the continued preference for a livestock-centered diet, research on livestock production continued to receive prime emphasis in USDA programs.

Livestock Production Research

Genetically lean hogs produce more lean meat than genetically fat ones, regardless of whether high or low energy diets are fed. Working with selected breeds of swine, USDA livestock geneticists are striving to hasten the day when consumers will be able to buy bigger, leaner loins and hams. A Yorkshire ham from a low-fat line, for example, contains about two pounds more lean meat than a similar ham from an unselected line.

Animal physiologists have been testing exploratory hormone treatments on ewes nursing their first lamb crop. The most promising treatment induced nearly half of the ewes to produce two lamb crops in the same year.

An ultrasound pregnancy test for ewes that does not require preparation of the animal and will not harm the ewe or fetus has been developed for small-flock owners. Guaranteed pregnancy means increased income, since the carryover of barren ewes costs about $2 for every breeding ewe.

> Repeatability estimates developed by USDA dairy scientists can now indicate with near certainty what kind of milk producers a given bull's progeny will be. The estimates are based on sire summaries that indicate the likelihood of a bull's siring daughters attaining a certain level of milk production. Production levels higher than the average could fatten yearly profit margins by $20 or more per cow.

Better Varieties—1969

New, better yielding, disease resistant crop varieties are developed every year by USDA scientists in collaboration with State agricultural experiment stations. During fiscal 1969, new or improved crop varieties of potatoes, spring barley, alfalfa, oats, wheat, and several cereal and feed grains were introduced.

> A new high-yielding alfalfa variety, Team, will help farmers cut crop losses caused by alfalfa weevils, several plant diseases, and pea aphids. Team is the end product of more than 10 years of intensive research.

A major breakthrough was scored in small grains research when a new breeding technique produced the first commercial hybrid of a small grain—hybrid barley. The technique may be applicable to other field and vegetable crops with a genetic makeup similar to barley's.

Labor-saving Research

Research continues to provide labor-saving and other advantages to U.S. agriculture.

> Chemical defleecing of sheep, successfully accomplished in USDA tests, may help relieve the labor shortage and price squeeze plaguing the sheep industry. Six to seven days after administering the chemical, an operator can grab a handful of wool and roll his wrist along the sheep's skin, defleecing quickly and systematically.

With newly developed, hand-carried tree shakers and auxiliary equipment, Hawaiian coffee growers now can harvest their crop mechanically. The equipment enables one man to do the work of three; and on the average 5-acre farm the savings will pay for the equipment in less than a year.

An experimental machine that disposes of cotton crop wastes and eliminates one tillage operation was tested successfully by USDA and Mississippi State engineers. Although further refinements are needed, the machine shows a strong potential for disposing of old-crop stalks and roots in cotton fields more efficiently than conventional equipment.

New cutting, chopping, and cleaning devices may make it economically feasible to harvest sugarcane that has grown into a tangled mass. The principles for prototypes of these devices, developed by USDA and Florida State engineers, are being made available to commercial manufacturers.

In some areas of U.S. agriculture labor-saving technology is just getting underway.

In 1968 only 1 percent of U.S. production of fruits and nuts was mechanically harvested. Except for tart cherries, no major fruit or nut had more than 5 percent of the 1968 crop mechanically harvested. Our projections indicate an overall increase to about 17 percent by 1975.

Mechanization of vegetables is more advanced. Of the total U.S. vegetable harvest, 58 percent is currently mechanized. We expect this to increase to 73 percent by 1975. Most major vegetables produced for processing are already nearing complete harvest mechanization.

Marketing Research

Research continues to produce marketing improvements which lower costs for farmers and consumers.

An improved turkey boning system, based on USDA recommendations and requirements, can increase yields and reduce operating costs at individual plants by $22,000 to $44,000 a year. Some 300 million pounds of turkey are processed annually for such specialty items as turkey legs and roasts.

> Work done under an ARS research contract may lead to drastic changes in the storage and distribution of fresh milk. Tests show that lowering the storage temperature to freezing or slightly above extends storage life to as long as 7 weeks. Under normal household refrigeration storage life averages 7 days. Research also indicates that milk pasteurized under higher-than-normal temperatures will keep 20 weeks and more.

Spoilage of Florida tomatoes during shipment and storage can be reduced by adding chlorine and a surfactant to the field wash. A USDA plant pathologist developed this solution, which reduces bacterial soft rot and bacterial necrosis.

The Search for New and Improved Products

Each year research adds new products or improves established products for the convenience and comfort of consumers.

A new chemical finishing process has been developed by ARS for durable press cotton garments. It gives fabrics the capacity to dry smoothly when hung on a line after the spin-dry cycle on a washing machine, instead of dripping wet after the rinse cycle.

A superior growth retardant has been identified by our horticulturists from among 100 candidate compounds. This new retardant will help both home gardeners and commercial growers reduce the stem length of ornamentals safely, economically, and effectively.

THE FIGHT AGAINST PESTS AND DISEASES

Researchers fight a never ending battle against livestock and crop diseases and pests.

Animal Diseases

During the fiscal year, North Dakota, Wisconsin, and Wyoming were declared free of hog cholera. Also in this select group are Alaska, Idaho, Michigan, Montana, Nevada, Oregon, Utah, Vermont, and Washington. All 50 States are involved in the eradication campaign.

An on-the-spot test for anaplasmosis, a cattle disease costing farmers in parts of the South and West as much as $50 million a year was developed. The new technique eliminates the need for sending blood samples to laboratories for analysis.

> A more efficient and effective way to detect trichinae in hogs slaughtered under commercial meatpacking conditions has been tested and proved. This method, called the pooled-sample digestion technique, could eventually be the means for eradicating trichinae in the Nation's swine.

A virus suspected of being the agent that causes leukemia in cattle has been cultured in the laboratory. Scientists have long theorized that the disease is transmissible and that a virus is the probable agent.

A more efficient technique for detecting the foot-and-mouth virus in throat scrapings from cattle was developed by USDA and is now being used to examine imported cattle.

Progress in Combating Poultry Diseases

Poultry researchers demonstrated that two disease-causing organisms that lack body structures for locomotion can invade the shells of chicken eggs in 5 to 30 minutes. Shell penetration by the two organisms—one causing chronic respiratory disease and the other Newcastle disease—was demonstrated under laboratory conditions.

In a new technique, paralleling pasteurization, a USDA veterinarian devised a preincubation heat treatment for eggs which stops the transmission of chronic respiratory disease in chickens.

Two promising leads which may lead to control of Marek's disease were discovered. This is the most costly poultry disease.

Protecting Against Plant Disease

In tests, an ARS-developed technique for inoculating cotton plants against verticillium wilt protected about 45 percent of a susceptible cotton strain against later infection. This disease causes annual losses of about $50 million to upland cotton.

Researchers found anhydrous ammonia to be effective, under certain conditions, as a fungicide for controlling *Fusarium* root or foot rot in cereal crops. The *Fusarium* fungus decreases crop yields, and there are at present no adequate control techniques.

Regulatory Activities

To keep foreign plant and animal pests and diseases from entering this country, ARS plant quarantine inspectors and cooperating customs officials examine thousands of trains, ships, and airplanes, and millions of passenger automobiles. During calendar year 1969, more than 80 million pieces of baggage were inspected.

The new Accelerated Inspection System is speeding the processing of travelers returning from abroad. During calendar year 1969, the System was approved for the John F. Kennedy International Airport, as well as for international airports at San Antonio and Houston, Tex.; Boston, Mass.; Anchorage, Alaska; Seattle, Wash.; Honolulu, Hawaii; and Washington, D.C. (Dulles). The System has also been authorized for Los Angeles and San Francisco, Calif.; Miami, Fla.; and Chicago, Ill.

In calendar year 1969, animal quarantine inspectors at points of entry checked the health status of 1.1 million imported animals—livestock, pets, and zoo animals—to guard against entry of costly diseases. About 59,000 animals were rejected for health reasons. More than 3⅓ million poultry birds were checked and 252 were rejected.

Plant Pest Control

During the year, 10 States were placed under Federal quarantine to protect against the cereal leaf beetle, a pest of small grains, corn, and grasses. Parts of six States were placed under Federal quarantine for the white-fringed beetle, an insect which feeds on nearly 400 species of plants.

New York and Delaware were placed under Federal quarantine for the golden nematode. Although this pest has virtually wiped out potato production in a number of European countries, aggressive control measures in the United States have so far held losses at low levels.

Total numbers of European corn borers have been increasing in almost all of the major corn-producing States. The search for specific genetic and chemical keys to corn borer resistance moved forward with the discovery of a built-in defense mechanism in resistant corn lines. Scientists found that the borer sets off a chain reaction with his first nibble: A resistant plant converts a plant sugar (glucoside) to a compound that the scientists have named DIMBOA—and this substance is distasteful to the insect pests.

FOREST RESEARCH

Forest research helps protect timber supplies against pests, diseases, fire, and other hazards; provides forecasts of future supplies; and seeks new uses for forest products.

Survey of Forest Resources

The Forest Survey carried on by USDA and cooperating State agencies obtained new information concerning forest resources on about 49 million acres of commercial forest land in 12 States: Alaska, Arkansas, California, Idaho, Mississippi, Maine, Nevada, New York, Ohio, South Carolina, Washington, and Wisconsin.

The first field survey of the forest resources of coastal Alaska showed that a much larger wood-using industry could be supported by the 5.7 million acres of commercial forest land and 185 billion board feet of sawtimber located there. In contrast, the 22.5 million acres of commercial forest land in the interior, with 31 billion board feet of sawtimber, is for the most part economically inoperable at this time.

An analysis of prospective trends in timber resources of the Columbia, North Pacific Water Resource Region indicates that the available log harvest may decline by 11 percent over the next half century.

This drop will take place primarily in western Oregon, now the major center of the forest industry, because of a dwindling cut from private timber lands.

A similar analysis for the California Water Resources Region projects a 15 percent decline in the harvest of roundwood for lumber and miscellaneous wood products by the year 2020. Use of roundwood and residues for pulp, however, is expected to rise substantially.

Increasing Forest Productivity

Several projects carried on during the fiscal year should help increase forest productivity and increase income for forest owners.

Plastic tubing for sap collection may prove to be a major factor in modernizing the 300-year-old maple sap industry. Tubing reduces labor costs and improves sap quality. Increased sap production with reduced labor requirements will boost the rural economy of many Northern States.

Irrigation of low-lying forests by flooding shows real promise as a low cost method of increasing forest growth and enhancing other forest values. In the Mississippi Delta, duck hunters often construct shallow water impoundments in forested areas to support ducks in the winter. A study at Stoneville, Miss., found that these impoundments can be regulated to produce large increases in tree growth. Water impounded up to 3 feet deep in the winter and released by July 1 not only made the area available for duck feeding, it also increased tree diameter growth by 50 percent.

Using Research To Fight Fires

Cloud seeding technology continued to show great promise for reducing lightning-caused forest fires which currently account for 70 percent of all fires in the West. Technology for the complete conversion of water droplets to ice in super-cooled clouds has been achieved, using Forest Service-developed equipment.

Forest Service research meteorologists made an important contribution to forest fire control through a study of the influence of seabreezes on forest fires. The arrival of a seabreeze at a wildfire, because it usually brought lower temperatures and higher humidity, had previously been considered a favorable event. The study shows, however, that in Western mountain locations uncertainties as to the strength and depth of a breeze make its influence unpredictable. This can greatly increase danger to fire fighters. In the East, seabreezes which oppose the west to east flow of weather systems, impart a new dimension to on-going fires. The waxing and waning of a seabreeze front can make close encounter with wildfire extremely dangerous.

SOIL AND WATER RESEARCH

Soil and water research continues to be a highly important part of the total USDA program.

Soil Erosion

Scientists continue to seek better methods of retarding soil erosion which strips fields of topsoil and deposits it as sediment in streams and waterways.

Vegetative cover has been used successfully in Georgia to reclaim land that had been gutted and bulldozed for kaolinite clay. Appropriate vegetation and seeding techniques are being researched by ARS and the Georgia Agricultural Experiment Station.

> Engineers and soil scientists from ARS and the Texas Agricultural Experiment Station demonstrated that applying gin trash to exposed loamy fine sand will help cotton farmers cut wind erosion losses by as much as 97 percent. Using gin trash also reduces waste disposal at the gin—where sticks, burrs, stalks, and bits of leaves are removed from the cotton.

A microridge roller developed and built by USDA engineers may help rehabilitate abandoned croplands in the central Great Plains. By firmly packing sandy soils into ridges, the roller reduces wind erosion and moisture loss during seedbed preparation.

Water Research

Mounting concern over declining ground water levels and increasing water costs in the Texas High Plains has led the Department to make estimates and projections on the most profitable use of water for irrigation over a 50-year period.

Irrigated acreage in the study area, covering 6.9 million acres, is projected to decline from 3.5 million acres in 1966 to 125,000 acres in the year 2015. There would be a substantial reduction in cotton and grain sorghum production and an increase in dryland wheat production. The annual value of crop production in the area would decline by 70 percent.

Since half of the decline is projected to occur by 1985, the next decade and a half will be a crucial period for irrigated agriculture in this portion of the High Plains.

> In recharging ground water supplies, shafts that return surface water to natural underground formations appear to be more satisfactory than wells. Such artificial recharge may be

especially useful in the Texas High Plains where irrigation is lowering around water levels.

More Effective Water Use

A surface precipitation gage designed by USDA soil scientists and engineers could become the prototype for a single instrument to measure rain, snow, and changes in snowpack water by evaporation, condensation, or melting. This would provide more accurate information for water studies and flood forecasts.

A recent study shows that the application of a wetting agent, such as a detergent, to water-resistant soils will allow rains to penetrate the soil and stimulate growth of grass, thus reducing both erosion and flood flow. The process currently costs between $18 and $31 per acre for materials and application. Under normal weather conditions one treatment will last at least a year.

AGRICULTURAL RESEARCH AND HUMAN HEALTH

During fiscal 1969, several research achievements were developed which may have important future effects on human health.

In laboratory studies, an active ingredient, called liriodenine, was isolated from a plant extract. It showed significant inhibition of human cancer cells in cell culture.

A lead toward finding the cause of human epilepsy may result from the discovery that a bacterial toxin which causes "wildfire" disease in tobacco also produces convulsions in rats and mice.

Microbiologists discovered an antibiotic that acts against yeasts. The significance of this discovery lies in the fact that yeasts cause secondary infections in humans and animals weakened by other diseases, and few existing antibiotics act against them.

A more rapid test for detecting Salmonella organisms in foods containing poultry or eggs was devised by an ARS microbiologist. The new procedure, which has been tried successfully with cake mixes, dried eggs, pot pies, dry milk, and livestock feeds, can be completed in just over 24 hours. To clear a product shipment by conventional methods takes up to a week.

Human Nutrition Research

An ARS research food technologist has shown how the amount of protein in ordinary bread can be doubled by combining wheat flour with flour made from cottonseeds, peanuts, soybeans, or safflower seeds.

A low-calorie dessert topping which does not require refrigeration can now be made from dried skim milk. Each cup of the whipped topping contains only 55 calories, compared with 350 calories in an equal amount of whipped cream.

During the year, the Department issued four regional reports on a survey of household food consumption patterns in the United

States. A preliminary nationwide report on the average diets of individual family members was also issued.

Nutrition-oriented publications released by the Department during fiscal 1969 and available at the U.S. Government Printing Office, included booklets and reports entitled: "Cereals and Pasta in Family Meals," "Pork in Family Meals," 'Apples in Appealing Ways," and "Food Selection for Good Nutrition in Group Feeding."

INTERNATIONAL RESEARCH

Scientists working under Public Law 480 grants are making significant findings that could solve many troublesome agricultural problems.

Basic research conducted by Israeli scientists on root lodging in wheat will help U.S. wheat breeders to breed more efficiently for root-lodging resistance. This could increase wheat yields by as much as 40 percent.

Israeli scientists have also developed, from soy protein and bananas, a protein-rich powder for beverages which shows promise for infant feeding in areas where milk is unavailable or insufficient.

> Scientists are anxious to find new ways to use soybeans in meeting the protein shortage. A Taiwan researcher has found the key to making sufu, a soybean cheese with such acceptable Western flavors as garlic, wine, and pepper.
>
> In one of the most significant achievements to date in breeding yeast for the production of fermented soybean foods, Japanese scientists have developed a hybrid yeast which outperforms any of its predecessors in making shoyu. Shoyu is an important soy sauce produced by fermenting soybeans and wheat.

This brief listing of some very recent agricultural research achivements offers a hint of further accomplishments to come—and not far off.

No one actually knows what wonders agricultural science will produce during the decade of the Seventies. We do know, however, that the kind of agriculture we will have during and at the end of that decade—the kind of environment that will surround us—the standard of living we will enjoy—and the kind of world we will live in—all these will be influenced to a considerable degree by the strides our agricultural researchers make and by our success in putting their research achievements into concrete and daily use.

EPILOG

Looking back at our first year in office we can report substantial progress toward some of our major goals and moderate progress in others.

The advances in farm income and in food aid for America's needy persons are of special significance.

Also, the Nation is now in a better position to attack its environmental and rural development problems. But there are big gaps to be filled in all areas.

One major question before us—a question which the people, the Congress, and the Executive Branch will need to face up to—is the so-called farm problem.

People have talked about the farm problem in this country for at least 40 years, and it is apparent that the basic nature of the farm problem has not changed very much in this 40-year period.

Basically, the problem stems from agriculture's ability to produce more than we can sell domestically and abroad. When a large number of individual producers make separate and individual decisions in their own best interests, the result does not always add up to the best interests of the entire industry. The difficulty of regulating production to meet market demands often causes us to overproduce.

It is sobering to look back over the past three or four decades and realize that a great many able and dedicated people have practically devoted their lives to attempting to solve this problem. Obviously there is no magic answer.

There have been some successes, as well as mistakes, in past farm policies. We view our job, our responsibility, as one of building on the successes and attempting to profit from the mistakes.

There are some who seem to think that because people on farms now make up less than 5 percent of our population, agriculture is a declining industry and is no longer important in the American economy.

This is not true. What happens to agriculture is eventually felt not only on every Main Street of our smaller towns and cities but in the financial and industrial centers of every American metropolis.

Agriculture is still the Nation's biggest industry. It employs more people than the steel industry, the auto industry, the utilities, and transportation combined.

Agriculture is a $55 billion customer in the American economy, and exports of farm products alone provide about 1 million nonfarm jobs.

The rate of increase in agricultural productivity in recent years has roughly doubled that of nonfarm industry.

Our efficient agriculture is the biggest reason the average American consumer gets an abundance of high quality food for only 16½ percent of his disposable, or after taxes, income—the world's best food bargain.

The U.S. agricultural revolution is one of the most significant, important, and promising breakthroughs in modern history—and it is still going on.

Agriculture is basic to this country—and sound agricultural programs are vital to the Nation.

It's a good idea now and then to remind ourselves when we buy our milk in bottles or cartons, our meat in packaged cuts, and our bread in sliced loaves, that it all starts on the farm.